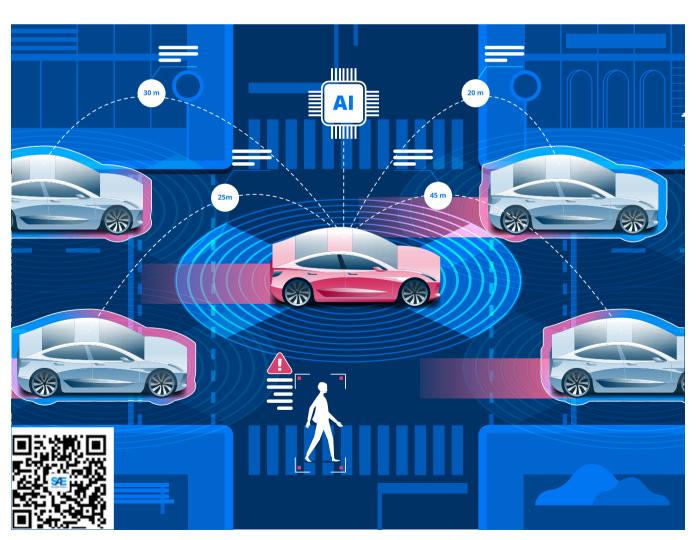# SAE-AWC 2019

AUTOMATED VEHICLE SECURITY & SAFETY
TECHNOLOGY CONFERENCE

自动驾驶汽车安全技术国际论坛

暨 "Automotive World China" 中国汽车电子技术展览会

8.28-8.30 深圳会展中心

August 28-30, 2019
Shenzhen Convention & Exhibition Center

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特别鸣谢以下公司对SAE-AWC 2019 新能源与智能网联汽车技术大会的大力支持。

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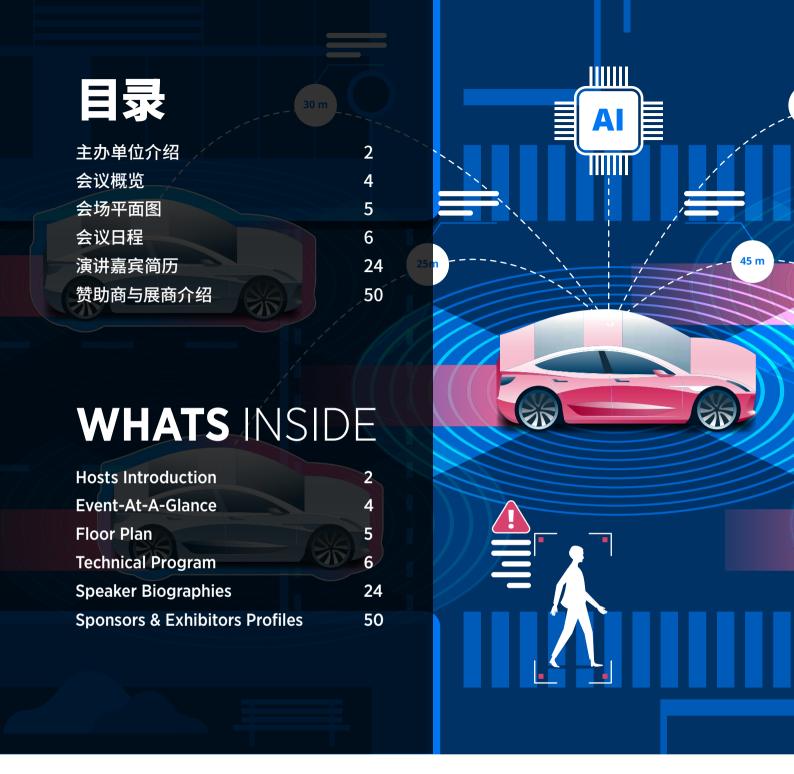### SILVER SPONSORS

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WHATS INSIDE

SAE International 国际自动机工程师学会 是航空航天、汽车、商用车及工程农用机械领域权威性专业学会。相对于其他机构，SAE 制定的车辆和航空航天标准在行业内占据绝对优势。同时，SAE 还提供全球最丰富的航空航天、汽车、商用车及工程农用机械领域的工程信息，并拥有全球性的车辆及航空航天工程师社交网络。

我们通过全面的项目、产品和服务，为行业提供信息、工具和技术，以帮助专业人士更好地完成工作，并保证下一代业内工程师能够获得良好的职业发展。

自 1905 年起，SAE 就开始建立航空航天、汽车、商用车及工程农用机械领域的工程师网络，整合他们所需要的技术资源，以满足他们终生学习的需要，推动行业技术的进步与发展。

SAE International 第一任副主席是一个名叫亨利·福特（美国福特汽车公司创始人）的才志兼备的工程师，在最早的发展阶段，SAE 就获得了奥维尔·莱特（飞机发明人之一）等人的支持。在此基础上，我们建立了一个紧密合作、信息互通的广泛的中立性平台，并制定了许多首创标准。今天，SAE 已经成为了全球公认最权威的航空、汽车、商用车及工程农用机械工程知识来源，而信息共享仍然是我们的基本原则。

A professional society, SAE International is the authority on vehicle engineering. We develop more vehicle technical standards—and more aerospace standards—than any other organization. We offer the largest library of vehicle engineering content. And, we bring together the largest global network of engineers in the world.

Through a comprehensive collection of programs, products and services, we supply the information, tools, and technical know-how to help today's professionals do their jobs better while we ensure the development of the next generation of mobility engineers.

Since 1905, SAE has connected automotive, aerospace, and commercial vehicle engineers to each other and the technical resources needed to foster a lifetime of learning, solutions to improved vehicle technology, and the advancement of the mobility industry.

SAE International—whose first vice president was an up-and-coming engineering talent by the name of Henry Ford and included early supporters like Orville Wright—was based on providing a platform for collaborative and informed dialog and the impetus of its earliest standardization efforts. Today, the sharing of information remains at its core, with SAE being acknowledged globally as the ultimate knowledge source for mobility engineering.

AWC 汽车电子技术展览会 由中国国际贸易促进委员会电子信息行业分会和励展博览集团主办，展会将汇聚业界具有影响力的展商，包括车身电子展区，自动驾驶展区，智能网联技术展区，新能源汽车技术展区，测试技术区等，为中国的汽车工程师们带来具有前瞻性与创新力的技术解决方案。与此同时，来自汽车主机厂、汽车一级供应商及 OEM 企业的优秀汽车工程师等也将汇聚一堂。展会同期将举办多场汽车电子技术研讨会，集结汽车行业专业人士及专家一起探讨行业关注的热点话题，审视行业发展新需求，开拓行业新机遇。
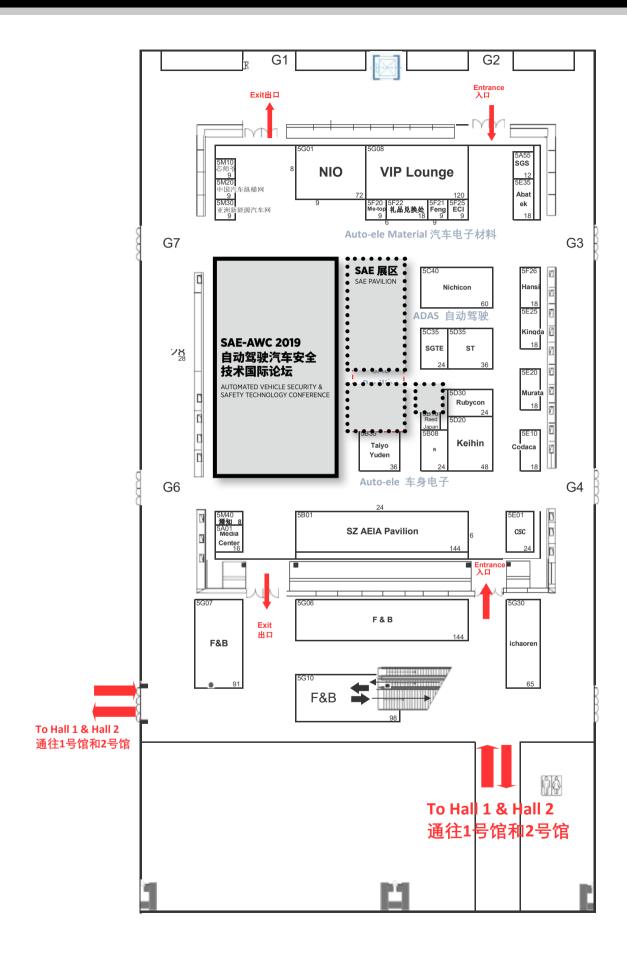
Organized by CCPIT and Reed Exhibitions, AUTOMOTIVE WORLD CHINA will bring together influential automotive industry exhibitors, including in Vehicle Zone, Autonomous Driving Zone, Intelligent Connected Vehicle Zone, New energy vehicle Technology Zone, Testing Zone, providing foresighted and creative solutions for Chinese automotive engineers. Meanwhile, outstanding automotive engineers from OEMs and tier one suppliers will also join AUTOMOTIVE WORLD CHINA. Multiple automotive electronics technology forums will be concurrently at AUTOMOTIVE WORLD CHINA, gathering automotive industry experts and professionals to discuss industrial hot topics, identify urgent needs and explore new opportunities.

SPECIAL SUPPORTER 特别支持单位

8 月 28 日・August 28

9:15	**欢迎致辞** Welcome Speech
9:30	**开幕演讲** Opening Speech
10:15	**自动驾驶车辆设计与开发** Automated Vehicle Design and Development
11:15	**技术领导人座谈** Technical Leaders Panel
12:15	午餐 Lunch
13:30	**自动驾驶安全技术** Autonomous Driving Safety Technologies
15:40	**自动驾驶测试与验证** Test and Verification of Autonomous Driving

8 月 29 日・August 29

9:15	**汽车网络信息安全** Vehicle Cybersecurity
12:25	午餐 Lunch
13:30	**汽车网络信息安全** Vehicle Cybersecurity
16:10	**专家座谈 - 应对信息网络安全挑战** Panel - Addressing the Challenge of Information Network Security

8 月 30 日・August 30

9:15	**自动驾驶功能安全与 SOTIF** Automated Driving Function Safety & SOTIF
12:25	午餐 Lunch
13:30	**专家座谈 - 自动驾驶功能安全与开发设计** Panel - Functional Safety and Design of Autonomous Driving
14:30	**《自动驾驶安全第一》白皮书解读** The White Paper Interpretation: Safety First for Automated Driving

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**SAE-AWC 2019
自动驾驶汽车安全
技术国际论坛**
AUTOMATED VEHICLE SECURITY &
SAFETY TECHNOLOGY CONFERENCE

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**To Hall 1 & Hall 2
通往1号馆和2号馆**

AUGUST 28

9:15	**WELCOME SPEECH** **Billy XU** General Manager, China - SAE International **Rui HAN** Director of CCPIT Electronics & Information Industry Sub-council Exhibition Division 2

OPENING SPEECH
Moderator: Junko Yoshida AspenCore Media

9:30	**Reshape the Industry Innovatively, Connect the World Smartly & Safely** **Ganesh V. Iyer** NIO USA **ABSTRACT** The automotive industry is changing rapidly and heading toward digital disruption, which will lead to high impact in the industry within a short period of time. What do automakers need to keep in mind during this process? In this session, we will be discussing strategies around next generation vehicle technology and upcoming challenges with the digital automotive security landscape.

AUTOMATED VEHICLE DESIGN AND DEVELOPMENT

10:15	**Reliable Safety Design of Intelligent Driving** **Weiguo LIU** Geely Automotive Research Institute **ABSTRACT** Autonomous driving is a popular technological field which has a promising future thanks to the development in AI, radar, high-precision map and 5G. From Geely's GPLOT 1.0 in 2015 to GPILOT 3.0 under development, and the future GPIOLT 4.0, Geely has been exploring and practicing development process, reliable and security research and system security verification. On the other hand, there are still challenges in the application of HAD, especially how to "develop human-related technologies" rather than "build a car." Others include misusing autonomous driving, the reliability of perception system, understanding of right-of-way, and effective system failure diagnosis.
10:45	**Safety Concept Development of L3 Autonomous Driving System** **Pang Sung-Hoon** China Faw Group **ABSTRACT** So much Autonomous driving sensor and ECU and Actuator will be adopted in L3 Autonomous Driving Vehicle and Several Recognition sensor, ECU & Actuator have been limited performance and functionality based on Safety Concept on Vehicle Architecture level. Therefore OEM shall consider the redundancy of performance and functionality regarding Sensor, ECU, Actuator, E/E communication and Power system in vehicle with Autonomous driving based on E/E Failsafe, SOTIF and ISO26262. • The definition of Safety Concept development on L3 vehicle • Driving USECASE & Hazard Risk on L3 vehicle • Process Model with Safety Concept of L3 Vehicle Development

TECHNICAL LEADERS PANEL

11:15	This panel will explore specific strategies car OEMs and AV technology suppliers might have developed as best practices to ensure the system-level safety of their AVs. The panel will ask what, if anything, these leading AV thinkers perceive as the remaining gaps in the AV design process, in testing and verifications and in the existing safety standards. **Panelists** **Ted S HUANG** Jiangling Motors **Dr. Junqiang SHEN** Freetech **Frank DONG** NVIDIA **Michael Krutz** Wind River **Dr. Chengliang YIN** Shanghai Jiao Tong University
12:15	**LUNCH**

8 月 28 日

9:15	**欢迎致辞**
	徐秉良 SAE International 中国区总经理
	韩 锐 中国国际贸易促进委员会电子信息行业分会 展览二处处长

开幕演讲
主持人：Junko Yoshida AspenCore Media

9:30	**重塑汽车行业创新，智能安全连接世界**
	Ganesh V. Iyer 蔚来（美国）
	摘要
	汽车产业正在发生快速的变化，正走向数字化变革，这将在短期内对产业产生巨大的冲击。在这个过程中，汽车制造厂商应该牢记什么？在本次会议中，我们将讨论如何应对下一代汽车技术和汽车产业数字化所带来的信息安全挑战。

自动驾驶车辆设计与开发

10:15	**智能驾驶的可靠安全设计**
	刘卫国 吉利汽车研究院
	摘要
	自动驾驶目前作为科技产业界的热门领域，随着人工智能，雷达，高精地图技术，5G 的助推，远景令人期待，吉利从 2015 年的 GPILOT1.0 ，到现在开发的 GPILOT3.0，再到未来的 GPIOLT4.0，从开发流程到可靠安全研究，以及系统安全的验证，一直在探索和践行，另一方面高度自动驾驶落地技术仍面临挑战，挑战在于，不是"造车"，而是"造人"，自动驾驶的误用，感知系统的可靠性，路权的理解，以及系统失效高诊断仍然面临挑战。

10:45	**L3 级别自动驾驶系统的安全概念开发**
	方成熏 中国一汽集团
	摘要
	在 L3 级别的自动驾驶汽车上需要配置很多的传感器和 ECU，然而其中有一些可识别性的传感器，ECU 和执行器性能有限并且需要依据整车架构级别的安全概念，因此对于整车厂来说，需要考虑功能和性能的冗余，对于传感，ECU，执行器和系统工程的交流，自动驾驶汽车的能源系统，需要依据系统安全失效，SOTIF 和功能安全。
	• L3 级别车辆的安全概念开发定义
	• L3 级别车辆的使用案例和危害分析
	• L3 级别车辆的安全概念流程模块

技术领导人座谈

11:15	此次座谈将探讨汽车整车厂和 AV 技术供应商可以制定的最佳策略，以确保他们的系统级 AV 安全。小组将询问这些业内领先的 AV 专家，在 AV 设计过程中，包括在测试和验证以及现有的安全标准中，他们认为还有什么不足之处。
	嘉宾
	黄少堂 江铃汽车 　　　　　　　　　　**沈骏强 博士** 福瑞泰克智能系统有限公司
	董方亮 英伟达 　　　　　　　　　　　**Michael Krutz** 风河
	殷承良 博士 上海交通大学

| 12:15 | **午餐** |

AUTONOMOUS DRIVING SAFETY TECHNOLOGIES

Moderator: Yu WANG Intelligent Driving Committee of Chinese Association for Artificial Intelligence

13:30	**Integrating SOTIF and Agile Systems Engineering** **Dr. Matt Thrasher** Ford Autonomous Vehicles LLC **ABSTRACT** This talk focuses on leveraging Systems Theoretic Process Analysis (STPA) for Safety of the Intended Functionality (SOTIF) Analysis according to ISO PAS 21448. A System Engineering Pipeline is introduced that uses a model-based approach to facilitate early verification via simulation. The addition of Agile enables fast iterations to boost scenario coverage while managing complexity.
14:00	**Safety and Security: Changing The Outlook of The Connected, Autonomous Car** **Timo van Roermund** NXP Semiconductors **ABSTRACT** Automotive safety and security are not only pivotal to market acceptance of autonomous vehicles, but a required rite of passage for any automotive supplier. At NXP, safety and security are part of our DNA: we have deep knowhow on these subjects and our safety & security culture is deeply embedded within the company. This means that at every stage of the design and development process, we are implementing industry best practices, complemented by NXP's unique experience and knowhow in safety & security, to deliver state-of-the-art security and safety solutions. We also make it easier for our customers to comply to industry-wide requirements and standards for safety and security by delivering documentation, tools and support to our customers. This session will dive into the three key areas where our safety and security approach coincide: • Solutions (technology / architecture / use cases) • Engineering process • Documentation
14:30	**The True Challenge of Developing Safe Autonomous Vehicles** **Michael Krutz** Wind River **ABSTRACT** The momentum for developing autonomous vehicles continues to accelerate. The auto industry is only now beginning to realize the significant difficulties that will be encountered in developing a truly safe autonomous vehicle. To solve this issue, the auto industry should learn from other industries, like aerospace and factory automation, that have overcome some of these challenges. Additionally, the auto industry must learn to collaborate to fully realize the promise of autonomous vehicles.
15:00	**Computer Vision and AI Applications for Safe Driving** **Talen TANG** VIA Technologies (China) Co., Ltd. **ABSTRACT** Computer vision and AI are increasingly applied in intelligence-assisted driving on a wide scale. Can the appearance of these new methods and structures conflict with existing car safety systems? This presentation combines analysis of computer vision and AI applications in driving safety, and introduces VIA's understanding of this new area of development.
15:30	**NETWORKING**

	自动驾驶安全技术 主持人：**王 羽** 中国人工智能学会智能驾驶专业委员会
13:30	**SOTIF 和敏捷系统工程的结合** **Matt Thrasher 博士** 福特自动驾驶汽车 **摘要** 本次演讲的主要内容是依照 ISO PAS 21448 标准，利用系统理论过程分析（STPA）方法进行预期功能安全（SOITF）分析。其中引入系统工程管线的概念，即采用基于模型的方法通过仿真辅助早期验证。灵活性的增加可实现更快速的迭代，从而在处理复杂性的同时增加所涵盖的场景。
14:00	**Safety and Security: 改变网联、自动驾驶汽车的前景** **Timo van Roermund** 恩智浦半导体 **摘要** 汽车安全和保障不仅对于自动汽车的市场接受度至关重要，也是任何汽车供应商的必守底线。对于 NXP 而言，安全和保障流淌在我们的血液里：我们具备这些命题的相关技术能力，同时我们的安全和保障文化也是深深植根于公司环境。也就是说，我们在设计和开发的每个环节上都在践行业内最佳实践，加上 NXP 在安全与保障方面的独特经验和能力，最终形成顶尖的安全和保障解决方案。我们遵守业界针对安全和保障的要求和标准，为客户提供记录、工具和支持，方便他们的使用。 本节将深入讨论我们的安全和保障方案重合的三个关键领域： • 解决方案（技术／架构／使用案例） • 工程程序 • 文件记录
14:30	**安全自动驾驶车辆开发的真正挑战** **Michael Krutz** 风河 **摘要** 自动驾驶汽车的发展势头日益强劲。汽车行业刚刚才认识到开发真正安全的自动驾驶汽车存在的重大困难。为了解决这一问题，汽车行业应该向航天和工厂自动化等其他行业学习，因为这些行业已经克服了其中一些挑战。另外，汽车行业必须学会相互协作，才能真正实现自动驾驶汽车的承诺。
15:00	**计算机视觉和人工智能在安全驾驶中的应用** **唐 亮** 威盛电子（中国） **摘要** 计算机视觉和人工智能在智能驾驶中的应用越来越广泛，新的方法和架构对于原有的汽车安全体系有何影响，是否有冲突？结合安全驾驶中的计算机视觉和人工智能的实际应用，介绍威盛对安全开发的认知与理解。
15:30	**休息**

TEST AND VERIFICATION OF AUTONOMOUS DRIVING
Moderator: Yu WANG Intelligent Driving Committee of Chinese Association for Artificial Intelligence

15:40	**Leveraging Simulations to Achieve Safety In Autonomous Vehicles** **Dr. Luca Castignani** MSC Software **ABSTRACT** When in 2014 SAE outlined the 6 levels of Driving Automation, it inspired a step-by-step approach from Level 0 (No Automation) to Level 5 (Full Automation). The proposed path envisaged a seamless transition from an era where cars only had ABS to an era where you can summon your "mobility device" just touching your smartphone. Does this vision still hold? What have we learned in the past 5 years? How can we best prepare for this exciting future? One thing is becoming clearer and clearer: full autonomy is out of reach if the development of these capabilities is not shifted from roads to simulation. Good news is that simulation tools have made gigantic steps in the recent years, and we at MSC have not been sitting on our hands.
16:10	**Simulating the Real World for Validation of ADAS and AD Systems** **Torsten Kluge** dSPACE GmbH **ABSTRACT** The definition of meaningful simulation scenarios including road descriptions, vehicle and traffic parameterizations is a key factor for successful virtual validation of highly automated driving functions. The dSPACE simulation tool suite ASM (Automotive Simulation Models) offers a variety of possibilities for road and scenario definitions based on requirements, real world data, measurements and standards like OpenDRIVE®, OpenSCENARIO and Open-Simulation-Interface (OSI). The recognition of the environment is performed by sensors of different types and level of details, like ground truth and physical sensor models. For a reliable validation, an appropriate automation is essential, as well.
16:40	**Introduction of PASTA: Portable Automotive Security Testbed with Adaptability** **Dr. Tsuyoshi Toyama** Toyota Motor Corporation **ABSTRACT** For accelerating the development of sophisticated driving-assist technologies such as automated driving, securing vehicles against cyberattacks is challenging. In such circumstances, ideally, we need such common platform that anyone can apply and evaluate security technology. Simulating an actual vehicle through hardware is also required for assessing threats of cyberattacks in the platform. The platform needs not only provide adaptablility for developing measures for existing cybersecurity but also simulate any function in actual vehicles using white-box ECUs. In this presentation, the portable automotive security testbed with adaptability (PASTA) is introduced and some demonstrations will be shown. PASTA has the possibility to contribute to a comprehensive development platform against vehicle cyberattacks. This presentation consists of an introduction of PASTA and several demonstrations using it.

自动驾驶测试与验证
主持人：**王 羽** 中国人工智能学会智能驾驶专业委员会

15:40	**利用仿真实现自动驾驶汽车的安全性测试** **Luca Castignani 博士** MSC Software **摘要** 2014 年，SAE 提出了 6 个级别的自动驾驶，涵盖了从 0 级（无自动化）到 5 级（全自动化）的逐步实现方法。这条路径设想除了一个无缝过渡的方法，从汽车只有 ABS 的时代，到在任何地方通过智能手机的触屏你都可以召唤出你的"移动驾驶设施"的时代。这一愿景依然可行吗？过去五年，我们学到了什么？我们如何才能为这个激动人心的未来做好准备？但是有一件事已经变得愈发清晰：如果这些能力的实现没有从道路实测转向模拟，那么完全自主驾驶就遥不可及。好消息是，仿真模拟工具在最近几年已经取得了巨大的进展，而我们 MSC 也没有停滞不前，也有了很多新的技术发展。
16:10	**模拟现实世界的 ADAS 和 AD 系统验证** **Torsten Kluge** dSPACE GmbH **摘要** 对有意义的仿真场景作出定义，包括道路描述、车辆和交通参数化，这是对高度自动化的驾驶功能进行虚拟验证的关键成功因素。dSPACE 仿真工具套件 ASM（汽车仿真模型）基于需求、真实世界数据、测量和 OpenDRIVE、OpenSCENARIO 和 Open-Simulation-Interface （OSI）等标准，为道路和场景定义提供了多种可能性。对环境的识别是通过不同类型和层次的细节传感器来完成的，比如地面真相和物理传感器模型。适当的自动化对于实现可靠的验证必不可少。
16:40	**PASTA 介绍：便携式汽车安全测试平台** **Tsuyoshi Toyama 博士** 丰田汽车 **摘要** 想要加速自动驾驶技术等复杂驾驶辅助技术的发展，保护汽车免受网络攻击的威胁是现在面临的一个难题。在这种情况下，比较理想的是我们需要这样一个共同的平台，方便所有人应用和评估安全技术。通过硬件模拟一辆真实的汽车也是在平台上评估网络攻击威胁的必要一环。这个平台不仅要能够提供当前网络安全开发方法的兼容环境，同时也要能够利用白盒 ECU 模拟真实汽车中的任意功能。本次演讲将介绍便携式汽车安全测试平台（PASTA）并进行展示。PASTA 有可能帮助我们构建一个可以抵抗汽车网络攻击的全面开发平台。本次演讲会对 PASTA 进行介绍，并对 PASTA 的一些使用进行展示。

AUGUST 29

VEHICLE CYBERSECURITY
Moderator: Dr. Wolfgang Sienel ETAS ESCRYPT

9:15	**The Baidu Apollo Vehicle Information Cybersecurity Solution** **Peng YUN** Baidu **ABSTRACT** We will analyze how the world would be without vehicle-borne information, and unravel the hazard of vehicle security in the era of ICV from the attacker's perspective. We will also present Baidu's IoV security solutions from the defender's perspective and how we deal with internal and external concerns using multiple approaches from defender's perspective.
9:45	**From Defining the Cyber-Risk to Monitoring its Realization** **Tzvika Shneider** HARMAN **ABSTRACT** Connectivity enables transformation but not without its risks. Sales of connected cars continue to grow and will reach an estimated 380 million vehicles by 2020. Protecting this increasingly complex connected car ecosystem can be a difficult task, especially as the proliferation of data across different connected devices makes them more vulnerable than ever before. Security monitoring become more and more important and we should consider it as a key part to manage security strategy. Via this speech, let's cross the chasm with HARMAN, from defining the cyber-risk to realizing cyber-security.
10:15	**Security for Automated Vehicles Across The Life Cycle** **Dr. Wolfgang Sienel** ETAS ESCRYPT **ABSTRACT** Automakers today have the skills to manage the highly complex development, production, and service processes for their vehicle platforms almost perfectly. However, the new disruptive technologies – autonomous and connected driving, e-mobility and shared mobility – are making these processes significantly more dynamic and complex. IT security requirements in particular will increase dramatically. Security-related regulatory requirements for type approval will further add to the complexity. The OEM's security approach across the entire system and its complete lifecycle must be strategically planned and implemented right from the start meeting the OEM's individual background and intended use cases on one side and ensuring compliance with regulatory requirements on the other side. Just as OEMs orchestrate their vehicle platforms today, they also have to orchestrate the IT security and adherence to regulatory security requirements of those platforms. The complexity of this task needs central security management that continuously sets the pace for the implementation and operation of the respective IT security measures at every level.
10:45	**NETWORKING**
10:55	**Autonomous Driving Safety & Security Challenges** **José Almeida** SYSGO **ABSTRACT** Autonomous driving is making his way to our daily environment. A lot of changes will result of this migration, new user experiences, new services, improved safety, decreased emission. One step required for this evolution is increased connectivity to support the new services desired by users, enable OEMs to access to vehicle (and user) data or fulfil regulators requirements to enforce new safety features such as emergency calls. This evolution has one obvious effect, the increase of attack surface towards vehicles ECUs that leads to increased security requirements and the need to consider security right from the beginning of the design phase. When thinking security people often think about data privacy which is of course a topic, however the most critical part is related to safety of the vehicle? The presentation will address these challenges, look what are the approaches taken in other domains and highlight security by design.

8 月 29 日

汽车网络信息安全 主持人：**Wolfgang Sienel 博士** ETAS ESCRYPT

9:15	**百度 Apollo 汽车信息安全解决方案** **云 朋** 百度 **摘要** 从攻击者视角，分析没有车载信息安全，世界将会怎样，梳理智能网联时代的汽车信息安全问题；从防御者视角，讲解百度车联网信息安全解决方案，多管齐下，应对内忧外患。
9:45	**从定义网络风险到现实中的检验** **Tzvika Shneider** 哈曼 **摘要** 联网使改变成为可能，但并非没有风险。智联汽车销量持续增长，预计到 2020 年将达到约 3.8 亿台。保护日益复杂而又相互连通的汽车生态系统将会是一项艰巨任务，特别是不同智联设备之间的数据流量的激增，也将使其自身变得比以往更加脆弱。安全事件的检测和监控将变得尤为重要，并应将其作为安全战略管理的重要组成部分。 本次演讲，让哈曼带您跨越鸿沟， 深度了解从定义网络风险到助力安全实现的全过程。
10:15	**全生命周期的自动驾驶车辆信息安全** **Wolfgang Sienel 博士** ETAS ESCRYPT **摘要** 现在的汽车制造商已经具备了管理其汽车平台高度复杂的开发、生产和服务流程的技能。然而，新的颠覆性技术——自动驾驶和网联汽车、电动交通和共享交通——正使得这些流程变得更加动态和复杂，特别是对信息技术安全的要求也会大幅提高。与信息安全相关的型式认证法规要求将使情况变得更加复杂。整车厂必须从一开始就对跨整个系统及其完整生命周期的信息安全方法进行战略规划和落实，这一方面要符合整车厂各自的背景和预期用例，另一方面要确保符合法规要求。现在，整车厂不仅需要协调他们的车辆平台，也必须协调信息技术安全并遵守这些平台的安全法规需求。这项任务的复杂性要求采用一种中央安全管理机制，对各个层级的信息技术安全措施实施调度。
10:45	**休息**
10:55	**自动驾驶安全挑战** **José Almeida** SYSGO **摘要** 自动驾驶正成为我们日常生活的一部分。这种转变、新的用户体验、新的服务、更高的安全性、更低的排放将带来很多变化。这一演变的一个关键环节是增加连接性以支持用户所需的新服务，使整车厂能够访问车辆（和用户）数据或满足监管机构的要求，以实施紧急呼叫等新的安全功能。 这种演变有一个明显的效果，即对车辆 ECU 的攻击面增加，导致安全需求增加，需要从设计阶段开始就考虑安全性。 当人们想到信息安全的时候，往往会想到数据隐私，这当然也很重要，但其实信息安全中最关键的部分与车辆的物理安全有关 该演讲将具体探讨上述难题，介绍其他领域采取了哪些方法，并强调通过设计保障安全性。

11:25	**Redefining Automotive Cyber Security in The Era of Intelligent and Connect**
	Samuel LYU Tencent Keen Security Lab
	ABSTRACT
	Future intelligent and connect vehicle "safety" = Functional Safety + Cyber Security. Especially in the current situation that the autonomous driving technology is gradually accelerating, car safety is more susceptible to cyber security problems. How to form a protection against the security of the intelligent and connect era? Through Keen research cases, combined with our core technology open to the whole industry, we have formed a cutting-edge solution for the cyber security industry for the intelligent and connect automotive industry.
11:55	**Life-Cycle Automotive Cybersecurity Test Plan**
	Yifeng YANG Keysight
	ABSTRACT
	With the development of autonomous driving technology, and new technologies that concerns vehicle itself, and the connection between vehicles, between vehicle and road, vehicle and people, as well as vehicle and cloud, vehicle safety, which involves the safety of human life and property - the most basic social security, becomes a top priority. It is necessary to conduct seamless end-to-end full-life cycle safety testing to ensure a greater safety. We will introduce comprehensively specific wireless, wired, in-car and cloud-based safety testing solutions to help you deliver safer vehicles and services.
12:25	**LUNCH**
13:30	**Vehicle Cybersecurity Defense System and Practice**
	Henry XIAO GAC R&D Center Silicon Valley
	ABSTRACT
	Considering IT security, in retrospect we explore and study the challenge and defense of ICV and vehicle networks. With these in place, we conclude four key systems to secure, as response we introduce four ICV and vehicle networking defense infrastructures. To the end, we share our key insights to have these security designs into the new ICV and vehicle network development, and some of our experience in this frontier work.
14:00	**Autonomous Vehicle Cyber Security – What Does the Future Bring?**
	Dr. Madeline Cheah HORIBA MIRA
	ABSTRACT
	Cybersecurity is already a major concern for manufacturers - but what will cybersecurity for vehicles of the future look like? Connected autonomous vehicles are expected to be plugged into an ecosystem that would mean that we would have to be faster, more agile and more responsive to security threats. This presentation will identify potential questions we would need to be answering about autonomous vehicles and the ecosystem and all the many new technologies that have already been trialed, and forecasts what security practitioners of the future will potentially face.
14:30	**Intelligent Connected Vehicle Development Trend and Case Analysis**
	Jianhao LIU 360
	ABSTRACT
	With the transformation and development of automotive industry with electrical, intelligent, connected, and sharing technology. Auto cyber security issues is becoming more and more important and OEMs are also increasly investing in cyber security area. Now, there are kinds of cyber security protect solutions, however automotive cyber security investment is quitely different from traditional network security methods. We must guarantee both cyber security and ensuring real-time operating, which brings great challenges to cyber security industry. This topic will analyze the previous attacks on automotive security vulnerabilities, sort out the protection measures, and carry out effective suggestions for the development of automotive security industry and eventually improve its development. It can guide the auto makers to know how to correctly address auto cyber security problems without national security standards at the moment.
15:00	**NETWORKING**

11:25	**智能网联时代，重新定义汽车安全**
	吕一平 腾讯科恩实验室
	摘要
	未来智能网联汽车"安全"= 功能安全 + 信息安全。尤其是在自动驾驶技术逐步加速落地的当下，汽车安全更容易受到信息安全问题的困扰，如何形成对智能网联时代汽车安全的防护？我们通过科恩经典的研究案例，结合我们对全行业开放的核心技术，形成了针对智能网联汽车产业的信息安全行业前沿解决方案。
11:55	**全生命周期的汽车网络安全测试方案**
	杨益锋 是德科技
	摘要
	随着无人驾驶技术的发展，各种车内，车车，车路，车人和车云的新技术的出现，汽车安全这涉及到人和生命财产安全的社会最基本安全成为重中之重。要保证汽车的更安全，端到端无缝的全生命周期的安全测试是必须要求。我们将介绍具体的无线，有线，车内及云端的全面的安全测试方案，帮助您实现更安全的车和服务。
12:25	**午餐**
13:30	**车网信息安全防护体系及实践**
	萧 海 广汽硅谷研发中心
	摘要
	从 IT 信息安全的角度审视车网信息安全的挑战与防护方法。重点提出四个防护子系统（边界、主机、通信和安全服务）和四大车网防护体系（边界防护体系、车端安全体系、PKI 认证传输体系和安全服务体系）及其于整车开发的方法实践和现实意义。并一同分享广汽集团在车网信息安全及智能防护体系建设方面的部分宝贵经验、开发理念与发展愿景。
14:00	**自动驾驶车辆网络安全 – 敢问路在何方？**
	Madeline Cheah 博士 HORIBA MIRA
	摘要
	网络安全已经成为制造商们关注的焦点，但未来的车辆网络安全会是什么样？互联自动驾驶车辆将被融入到生态系统中，这意味着我们必须对安全威胁作出更快、更灵敏和积极的响应。本次演讲将指出自动驾驶汽车，生态系统以及所有已经试验过的新技术的潜在问题，并预测未来安全从业人员可能面临的问题。
14:30	**智能网联汽车安全发展趋势与案例分析**
	刘建皓 360
	摘要
	随着汽车向电动化、智能化、网联化和共享化的方向转型发展。汽车网络安全的问题日益凸显，汽车产业面临着严峻的安全挑战。汽车厂商也在不断加大汽车网络安全的投入，网络安全的方案可选择性很多，但汽车网络安全投入与传统网络安全不同。需要在保障实时性的同时保证网络安全，这给网络安全领域带来了极大的挑战。本议题主要通过对以往的汽车安全的攻击案例及安全漏洞进行合理的威胁分析，梳理出相应的安全防护措施，形成对汽车产业有效的发展建议，促进产业发展。
15:00	**休息**

15:10	**Threats to Automotive Industry: Supply-chain Attacks Statistics with Real Case Examples**
	Kirill Kruglov Kaspersky Lab
	ABSTRACT
	Automotive business is complicated and consist of multiple suppliers. Kaspersky ICS CERT did a research on how Tier-1 are attacked by different threat actors. This is an exclusive research on automotive supply chain attacks.
15:40	**How Security Methodologies can Help Building Secured by Design Architectures of Autonomous Vehicles?**
	Emmanuel Arbaretier Airbus APSYS
	ABSTRACT
	Security issues are more and more critical in the development of innovative systems which are connected to many kind of IoT, sensors and infrastructure equipment, because intelligence inside needs to use in a real time process massive quantities of information which are constantly processed and checked for many decision making purposes; this tremendous flow circulation and exchange process develops high vulnerability for autonomous systems and vehicles which are so much dependent on the environment, and we will handle different sensitive questions concerning security and cyber security analysis which have to be achieved in the context of the development of autonomous vehicles: how can "secured by design" principles of architecture can be taken into account for better protections? Is there any knowledge which can be withdrawn from other domains such as aeronautics and railways? How safety and security common stakes can be encompassed in a global approach? APSYS which has been demonstrating aircraft security for years will show how a fundamental approach can be applied to many different domains and is widely described in state of the art of existing standard and methodological framework.

PANEL - ADDRESSING THE CHALLENGE OF INFORMATION CYBERSECURITY

16:10	How to balance the increase of external access and the complexity of single point access function? How to avoid or reduce the information security risk brought by AI and the information security risk of sensors? Connectivity and digitalization is progressing quickly for both the traditional automotive industry as well as emerging mobility providers. Which risk scenarios are you considering as most likely? Is the introduction of cybersecurity measures keeping pace to protect from these scenarios? How to balance the increase of external access and the complexity of single point access function? How to avoid or reduce the information security risk brought by AI and the information security risk of sensors?

Panelists

Henry XIAO GAC R&D Center Silicon Valley

David ZHONG Alibaba

Jintao ZHU Huawei

Jhenukumar Subramaniam
Geely Automotive Research Institute

Yingluo LUO CICV

15:10	**对汽车行业的威胁：供应链攻击统计与实际案例**
	Kirill Kruglov 卡巴斯基实验室
	摘要
	汽车行业是复杂的，包含多个供应商。Kaspersky ICS CERT 对 Tier-1 如何受到不同威胁行动者的攻击进行了研究。这是专门针对汽车供应链攻击的研究。
15:40	**网络安全方法如何帮助建立通过设计来保证的自动驾驶汽车的网络安全**
	Emmanuel Arbaretier 空中客车 APSYS
	摘要
	在连接多种物联网、传感器和基础设施设备的创新系统的开发中，信息安全问题变得越来越重要，因为内部的智能化需要使用大量的实时信息，并不断对这些信息进行处理和检查以用于多种决策制定。这种巨大的信息循环和交换过程给高度依赖环境的自动驾驶系统和汽车带来了较大的信息风险。我们将探讨自动驾驶汽车开发过程中涉及信息安全和网络安全的各种敏感话题：如何才能将"设计实现安全"的架构原则考虑进来，以实现更好的车辆保护？可以从航空和铁路等其它领域借鉴一些知识吗？如何在全球化的发展中同时实现汽车的物理安全和信息安全呢？多年来一直在演示飞机安全性的 APSYS 将展示如何将基本方法应用到不同的领域，以及如何用最先进的现有标准和方法框架对其进行描述。

	专家座谈：应对信息网络安全挑战
16:10	汽车网络安全是一个横跨多个行业和技术领域的新体系，如何有效的组织资源，分工合作，构建完善的网络安全生态？无论是传统汽车行业，还是新兴的移动出行服务提供商，都在快速推进互联互通和数字化的发展。您认为哪些风险场景出现几率最高？是否及时引进了网络安全措施以防止这些情况的发生？如何处理外部接入增多与单点接入功能复杂度的平衡，以及 AI 带来的信息安全风险，传感器的信息安全风险，如何规避或减轻？

嘉宾

萧 海 广汽硅谷研发中心　　　　　　　　　　**Jhenukumar Subramaniam** 吉利研究院

钟 伟 阿里巴巴　　　　　　　　　　　　　　**罗璎珞** 国汽智联

朱锦涛 华为 .

AUGUST 30

AUTOMATED DRIVING FUNCTION SAFETY & SOTIF
Moderator: Dr. Hao DONG Utcer

9:15	**Automated Vehicle Safety Issues: A Functional Safety, SOTIF, and Multi-Agent Perspective** **Dr. Juan Pimentel** International Consultant **ABSTRACT** The public acceptance and trust of autonomous vehicles (AV) has never been high and this acceptance is not getting better due to a number of events such as the recent postponement in the deployment of the first GM robotaxi by Cruise. Other events such as accidents involving AVs and admissions by Industry executives that to develop an autonomous vehicle with a high level of safety is really hard, much harder than initially anticipated is not helping the situation. Several current, in development, and planned international standards are intended to help address many of the issues associated with developing safe automated vehicles but other issues still remain. In this presentation, some automated vehicle safety issues from the perspective of functional safety, SOTIF, and multi-agent will be discussed.
9:45	**Generation of Safety Critical Scenarios for Simulation and Validation of Autonomous Vehicles** **Mohamed Tlig** IRT SystemX **Julien Niol** Airbus APSYS **ABSTRACT** In the context of a methodological cooperation achieved through an IRT Research project, which concerned design, safety assessment and validation of autonomous vehicles, some scientific and technical material has been produced and collected about how to provide some assurance about autonomous systems and how it has to change the way we conceptualize knowledge about such systems and we produce evidence about how they will behave and how far they will be exposed to critical situations able to cause human damages. We try to describe through the use of a behavioral simulation platform named SIMFIA_Neo, how an incremental engineering framework, can be setup, and where close interaction between operational deployment field analysis and virtual simulation can contribute to better Safety assurance. SIMFIA_Neo enables to build a system model with high abstraction level and enables to generate all minimal paths (called cuts by analogy with failure trees) to a given feared event. Our general approach consists in using SIMFIA_Neo to generate potentially critical scenarios, i.e., set or sequences of internal failures linked to interpretation or interaction problems. Since the model is high-level, it may not contain all critical scenarios of the given system. Nevertheless, it is recognized that this method is more efficient and provides better assurance than simulating a finite set of scenarios, in a detailed model (typically a physical simulator), where the set of possible scenarios is infinite. Every scenario generated by MBSA represents a "class" of scenarios, which can be than simulated in a physical simulator. So, after scenario generation, we validate them in a physical simulator, defining the precise parameter bound to the critical scenario classes.
10:15	**Role of IP Technology Providers in ISO/PAS 21448 (SOTIF) Compliance** **Antonio Priore** ARM **ABSTRACT** ISO/PAS 21448 was released in 2018. Soon after its release, and sometimes even before, questions around the involvement of Semiconductor and IP technology providers were raised. The activities described by the document are in fact mostly applicable at the system and vehicle level. This presentation aims at providing answers to such questions by explaining the key role that providers of IP elements, both HW and SW, play in the analysis of the intended function, once this is decomposed and allocated to the different blocks of the design hierarchy. In conclusion, the presentation will provide a proposal of what the committee for the definition of ISO 21448 should include as additional guidance in the matter of the analysis of the HW and SW elements with respect to the SOTIF.
10:45	**NETWORKING**

8 月 30 日
自动驾驶功能安全与 SOTIF **主持人：董浩 博士** 优策科技（北京）有限公司

9:15	### 自动驾驶车辆安全问题：功能安全、SOTIF 和多智能体视角 **Juan Pimentel 博士** 国际咨询师 **摘要** 公众对自动驾驶汽车（AV）的接受度和信任度向来不高，而且由于一系列的事件——比如最近 Cruise 推迟了第一辆 GM 无人驾驶出租车的部署，并不有助于提升公众接受度。其他一些事件对形势也没有任何帮助，比如涉及自动驾驶汽车的事故，以及行业高管承认开发高安全水平的自动驾驶汽车比最初预期的困难得多。目前正在开发和计划中的一些国际标准旨在帮助解决与开发安全自动化车辆相关的许多问题，但其他问题仍然存在。在本演讲中，我们将从功能安全、SOTIF 和多智能体的角度讨论一些自动驾驶车辆的安全问题。
9:45	### 自动驾驶汽车仿真和验证安全关键场景的生成 **Mohamed Tlig** IRT SystemX **Julien Niol** 空中客车 APSYS **摘要** 在通过 IRT 研究项目（涉及自动驾驶车辆的设计、安全评估和验证）所实现的方法学合作中，我们生产和收集了一些科技材料，内容涉及如何为自动驾驶系统提供保障，以及如何改变对这类系统的知识概念化的方式，我们提供证据说明这些系统的行为方式，以及它们在可造成人员伤亡的危险场景中的暴露程度。我们尝试使用一个叫做 SIMFIA_Neo 的行为仿真平台来描述如何搭建增量工程框架，以及操作部署字段分析和虚拟仿真之间的密切交互可以在哪些领域帮助提升安全保障。 SIMFIA_Neo 能够构建具有高抽象级别的系统模型，并能够生成到达给定危险事件的所有最小路径（与故障树类似，称为近路）。我们的一般方法是使用 SIMFIA_Neo 生成潜在的关键场景，即，与解释或交互问题相关的内部故障集或序列。由于模型是高级的，它可能不包含给定系统的所有危险场景。然而，相比于在详细模型（通常是物理模拟器）中模拟有限的场景集，该模型模拟的场景集是无限的，人们认为它更加高效且能够提高更好的保障。MBSA 生成的每个场景都代表一个场景"类"，之后可以在物理模拟器中对其进行模拟。因此，我们可以定义绑定到关键场景类的精确参数，在生成场景后，在物理模拟器中对这些场景进行验证。
10:15	### IP 技术提供商在 ISO/PAS 21448（SOTIF）合规中的作用 **Antonio Priore** ARM **摘要** ISO/PAS 21448 发布于 2018 年。在其发布后不久，甚至在此之前，出现了很多有关半导体和 IP 技术提供商参与度的争议。文件中描述的活动实际上在系统和汽车层面最为适用。 本次演讲将通过阐述将预期功能分解并分配到设计体系中不同模块的情况下，IP 要素供应商（HW 和 SW）在功能分析中发挥的关键作用，从而回答上述问题。 最后，讲者将建议 ISO 21448 定义委员会应在 SOTIF 相关的 HW 和 SW 元素的分析问题上应加入的额外指南。
10:45	**休息**

10:55	**Certification and Homologation of Highly Automated Vehicles Following ISO 26262 and SOTIF**
	Dr. Wolfgang Berns ROSAS Center Fribourg
	ABSTRACT
	Today, we experience a paradigm change in the world of transportation where automated and autonomous vehicles will play a key role in tomorrow's mobility. And the continuing, rapid evolution of technologies for partial or fully automated driving will shift the role of the driver from an active operator to a passive monitor, depending on the level of automation, i.e. the driver remaining in the control-feedback loop of the vehicle. Consequently, there will be also a shift of responsibilities from the driver to automated driving (assistance) systems, helping to make the vehicle as a system safer and the operation of these vehicles, integrated in new system of transportation and mobility, and ultimately preventing injuries and saving lives.
	Standards to assure the safe and secure design of vehicle safety features and related equipment (ISO 26262, SAE J 3061) exist, and those for their performance in automated vehicles are in development (ISO 21448 – SOTIF). However, in terms of legislation there is no legal framework affecting the operation of highly and fully automated vehicles. Consequently, there is no framework of regulations for the homologation of these vehicles integrated in today's structure of road transportation.
	A conceptual approach will be presented how a legal framework for the certification and homologation of vehicles at high automation levels can be realized.
11:25	**Holistic Approach Towards Safety within Development Process**
	Stanislav Lincer Great Wall Motor
	ABSTRACT
	Giving engineers holistic understanding about Safety development areas can be crucial in order to support efficient development of safe product, especially when speaking about automated driving.
	Considering safety relevant failures of our products, those can be caused by incorrectly defined functionalities (system works fine, but we have ordered him to do unsafe task) as well as by system imperfections (we have ordered to do a task safely, but system failed to do so).
	Focusing on safety of E/E relevant systems and respective road vehicles standards, right now there are three main directions: Safety of the Intended functionality (ISO 21448), Functional Safety (ISO 26262) and Cybersecurity (ISO 21434).
	Main goal of this presentation is to share Great Wall Motors' experiences about how to efficiently define development process covering above mentioned areas.
11:55	**Difficulties of Safety Verification for AI Based Technologies**
	Hakim Nyampa Bureau Veritas Exploitation
	ABSTRACT
	Artificial intelligence has known a great surge of work recently and poses new challenges on functional safety. The industrial application of this technology creates new needs and the growing demand for AI-based system assessments & verification need to be tackled. The development of autonomous vehicles may be possible with AI-based software that replace the human capabilities to drive. This technology is recent and requires provable guarantees for an application to safety-critical systems. Verifications and testing methods need to be adapted in order to verify safety critical AI-based systems.
12:25	**LUNCH**

10:55	**ISO 26262 和 SOTIF 标准之后的高度自动化汽车的认证与鉴定**
	Wolfgang Berns 博士 ROSAS 中心（瑞士弗里堡）

摘要

当前，我们正在经历全球运输行业的范式变化，自动化和自动驾驶汽车将成为未来交通的主力。半自动和全自动驾驶技术正在发生持续且迅猛的变革，这也将会改变驾驶员的角色。驾驶员将从一个主动的操作者变为被动的监察者，具体角色则取决于汽车的自动化级别，例如在某种级别中，驾驶员依旧是汽车控制 - 反馈循环中的一环。因此，相关责任也会从驾驶员转移至自动驾驶（辅助）系统身上，从而提高汽车的系统性安全，将这类汽车的操作与新的交通运输系统结合，最终实现避免伤亡、保护生命的目的。

现在已经出台汽车安全性能和相关设备的安全设计标准（ISO 26262、SAE J 3061），有关这些标准在自动驾驶汽车中应用成效的标准也在制定中（ISO 21448 - SOTIF）。但在立法方面仍未形成高度自动和全自动驾驶汽车操作的法律框架。因此，当前也并没有认证该类汽车同当前道路交通架构结合的规范框架。

会上将展示实现高度自动化汽车证明与认证的概念方法。

11:25	**安全开发流程的完整性思路**
	Stanislav Lincer 长城汽车

摘要

给工程师提供完整的安全开发领域介绍，安全领域的划分对充分支持安全产品开发，特别是自动驾驶至关重要。

考虑到产品可能出现的安全相关的失效，失效可能是由于非正确的功能定义（系统正常工作，但是我们要求它执行不安全的任务）以及系统的缺陷（我们请求的任务是安全的，但是系统出现失效）。

侧重于 EE 相关的系统和相应的道路车辆标准，目前主要有三个方向：预期功能安全 (ISO 21448)，功能安全 (ISO 26262) 以及网络安全 (ISO 21434)。

演讲的主要的目标是分享长城汽车如何高效定义安全相关的领域及其开发流程的经验。

11:55	**基于 AI 的技术在安全验证中的困难和挑战**
	Hakim Nyampa 必维国际检验集团

摘要

众所周知，当前人工智能正在汽车领域快速发展，这对功能安全提出了新的挑战。人工智能技术在产业的应用对基于 AI 系统的评估和验证提出了新的且不断增长的需求。无人驾驶车辆的发展使得基于 AI 的软件有可能替代人类进行驾驶操控，因此 AI 技术应用于安全关键系统需要进行可获得充分证明的保障，原有的验证和测试方法需要进行改变以验证基于 AI 的安全关键系统。

12:25	**午餐**

	PANEL - FUNCTIONAL SAFETY AND DESIGN OF AUTONOMOUS DRIVING
	Moderator: Yuanning QU Bosch Automotive Co.(Suzhou)
13:30	How to ensure functional safety under the new division of labor (changes in OEM, tier1 supplier and technology companies) in the autonomous driving industry? How does AI algorithm in autonomous driving address the safety demonstration required in the functional safety standards?——How to limit and regulate the use levels and stages of AI algorithm, to enable it to comply with such safety demonstration? How to effectively integrate FuSa and SOTIF, including analysis process, development and validation process, team cooperation and other aspects, to ensure the safety of autonomous driving system? **Panelists** **Dr. Juan Pimentel** International Consultant **Yali WANG** Baidu **Antonio Priore** ARM **Jun BIAN** **Yin CHEN** BAIC Technology Center of SAIC Passenger Vehicle Branch

	THE WHITE PAPER INTERPRETATION: SAFETY FIRST FOR AUTOMATED DRIVING
14:30	This publication summarizes widely known safety by design and verification and validation (V&V) methods of SAE L3 and L4 automated driving. This summary is required for maximizing the evidence of a positive risk balance of automated driving solutions compared to the average human driving performance. There is already a vast array of publications focusing on only specific subtopics of automated driving. In contrast, this publication promotes a comprehensive approach to safety relevant topics of automated driving and is based on the input of OEMs, tiered suppliers and key technology providers. The objective of this publication is to systematically break down safety principles into safety by design capabilities, elements and architectures and then to summarize the V&V methods in order to demonstrate the positive risk balance. With Level 3 and 4 automated driving systems still under development, this publication represents guidance for potential methods and considerations in the development and V&V. This publication is not intended to serve as a final statement or minimum or maximum guideline or standard for automated driving systems. Instead, the intent of this publication is to contribute to current activities working towards the industrywide standardization of automated driving. **Panelists** **Yali WANG** Baidu **Yan CHEN** HERE **Qianying ZHU** Intel China Research Center

	专家座谈：自动驾驶功能安全与开发设计 **主持人：曲元宁** 博世汽车（苏州）
13:30	自动驾驶行业的新分工（OEM、Tier1、科技公司等的分工变化）背景下，功能安全如何开展？ 自动驾驶中的 AI 算法，如何应对功能安全标准的安全论证？——如何限制和规范 AI 算法的使用层级和阶段，使其满足功能安全标准的论证过程？ 如何有效融合 FuSa 和 SOTIF，包括分析过程、开发及验证流程、团队配合等各方面，实现自动驾驶系统安全？ **嘉宾** **Juan Pimentel 博士** 国际咨询师　　　　　　**王亚丽** 百度 **Antonio Priore** ARM　　　　　　　　　　**边 俊** 上汽乘用车技术中心 **陈 音** 北汽股份
	《自动驾驶安全第一》白皮书 解读
14:30	《自动驾驶安全第一》旨在共同建立自动驾驶的安全行业标准，同时强调了通过设计、测试与验证，实现安全的重要性。本白皮书首次为自动驾驶车辆（AV）的开发和运营企业为证明自动驾驶车辆"比人类平均驾驶水平更安全"提供了一个清晰可追溯的系统规范，并具体到例如摄像头、转向系统等部件。基于十一家公司的专家经验梳理而成的 12 项指导原则，共同组成了这份白皮书的核心，并且首次将 SAE 自动驾驶分级标准（J3016）中 L3 和 L4 级别所有常见的、有效的自动驾驶安全方法汇聚在一处。 这些原则定义了何为安全驾驶，以及为评估自动驾驶车辆（AV）是否安全其应具备哪些能力。《自动驾驶安全第一》白皮书将行业内整车制造商、零部件供应商及技术开发商等主要参与者的专业知识整合在一起，为开发安全的自动驾驶汽车提供指导。 过去几年间，为了降低车辆碰撞引起的伤亡、改善交通环境、并引入全新出行概念，人们对自动驾驶的兴趣和其技术发展经历了前所未有的飞速增长。快速发展的同时，成熟企业和不断涌现的初创公司也带来了丰富的开发方法论。 **嘉宾** **王亚丽** 百度 **陈 艳** HERE **朱倩影** 英特尔中国研究院

Ganesh V. Iyer
蔚来汽车（美国）
董事总经理

Ganesh V. Iyer 是蔚来汽车（NIO）在美国的董事总经理，也是 NIO 全球数字开发和运营的副总裁兼 CIO。他是一位精通业务的 CIO 和数字运营高管，拥有超过 30 年的从业经验，在包括自主技术、高科技、制造和电信在内的多个行业取得了卓越成就。他在新兴市场和全球市场上帮助面临历史挑战的数字组织实现了显著增长，并以此而闻名。他专长的领域是变更管理和建立跨组织关系以实现公司目标。

在将近 5 年的时间里，Ganesh 是特斯拉汽车公司的副总裁兼 CIO。他负责管理特斯拉的电子商务、本土 ERP、服务运营、商业智能系统和零售业务。在特斯拉之前，他在 VMWare 担任高级 IT 领导职务，负责交付 VMWare 的客户授权管理软件解决方案以及 ERP 系统。

在此之前，Ganesh 是瞻博网络（Juniper Networks）的 IT 主管。他负责全球 ERP/CRM 系统的实施。作为六西格玛绿带专家，Ganesh 在简化 Juniper 的业务流程、优化各个业务单元的 IT 投资方面发挥了重要作用。

在加入 Juniper 之前，Ganesh 是 WebEx 的 IT 总监，负责 IT 开发、运营和产品工程的各个方面。2000 年，他协助 CFO 成功完成了 WebEx 的 IPO。

在加入 WebEx 之前的 10 年，他主要为电子数据系统（EDS）和塔塔咨询服务（TCS）提供咨询服务，并为 Oracle、Total Petroleum、Tata Chemicals、MumbaiStock Exchange 和 Sun Microsystems 等客户部署 ERP、CRM 和 OSS 系统。

Ganesh 拥有化学工程学士学位，并在印度卡利卡特地区工程学院辅修数学。

Ganesh V. Iyer
Managing Director
NIO (U.S.)

Ganesh V. Iyer is the Managing Director of NIO in the U.S. and Vice President and CIO of Global Digital Development & Operations for NIO. He is a business-savvy CIO and Digital Ops Exec with over 30 years of experience delivering proven results in various industries including Autonomous Tech, Hi-Tech, Manufacturing and Telecom. He's recognized for achieving significant growth in historically challenged digital organizations in emerging and global markets. He is an expert at change management and building relationships across the organization to achieve company goals.

For nearly 5 years, Ganesh was Vice President and CIO at Tesla Motors. He led Tesla's E-Commerce, Home Grown ERP, Service Operations, Business Intelligence systems and Tesla's retail operations. Prior to Tesla he led senior IT leadership roles at VMWare where he was responsible for delivering VMWare's customer entitlement management software solution as well as ERP systems.

Prior to this role Ganesh was the Director of IT at Juniper Networks. He was responsible for the global ERP/CRM systems implementations. Being a Six Sigma green belt expert, Ganesh was instrumental in streamlining Juniper's business processes to optimize the IT investments across various business units.

Prior to Juniper, Ganesh was the IT Director at WebEx and was in-charge of all aspects of IT development, operations and product engineering. He was instrumental assisting the CFO for a very successful IPO of WebEx in 2000.

Prior to WebEx, he spent 10 years in consulting primarily for Electronic Data Systems (EDS) and Tata Consultancy Services (TCS) and implemented ERP, CRM and OSS systems for various clients including Oracle, Total Petroleum, Tata Chemicals, MumbaiStock Exchange and Sun Microsystems.

Ganesh has a BS degree in Chemical Engineering with a minor in mathematics from Regional Engineering College, Calicut in India.

刘卫国
吉利汽车研究院
资深总工程师

刘卫国，2004 年 3 月毕业于东北大学车辆工程专业，获硕士学位，现任职于浙江吉利汽车研究院有限公司，职务资深总工程师，吉利智能驾驶业务带头人；中国汽车碰撞安全标准工作组成员，智能网联汽车标准工作组委员兼副秘书长。2007-2012 年工作期间主持开发吉利"帝豪"、"全球鹰"、"英伦"等车型安全系统项目，并获得 C-NCAP 成绩多项第一。2013-2019 年期间主持开发的吉利"博瑞"、"博越"、帝豪"GS/GL""领克""缤越""星越"等车型智能驾驶系统项目，引领自主品牌汽车的智能驾驶技术趋势。工作期间共获得省部级以上奖项 12 项，市区级奖项 10 项，企业内部奖项 28 项，申报科技成果鉴定 12 项，发表论文三十余篇，专利百余项，2015-2019 年期间获取 2 项社会力量科技奖项。

Weiguo LIU
Senior Chief Engineer
Geely Automotive Research Institute

Liu Weiguo, graduated from Vehicle Engineering major of Northeast University in March 2004 with a master's degree. Now he works in Zhejiang Geely Automobile Research Institute Co., Ltd., as a senior chief engineer and leader of Geely's intelligent driving business. He is a member of China Auto Crash Safety Standards Working Group, member and Deputy Secretary-General of Intelligent Connected Automotive Standards Working Group. From 2007 to 2012, he took charge of the development of safety system projects of Geely's Emgrand, Global Hawk, Englon and other models, and won many first prizes in C-NCAP. From 2013 to 2019, he has led the development of intelligent driving system projects of Geely's Bo Rui, Bo Yue, Emgrand "GS/GL", Lynk & Co, Bin Yue, Xing Yue and other models, leading the trend of intelligent driving technology of proprietary brands. He has won 12 provincial or ministerial awards, 10 municipal or district awards, and 28 internal awards of the company. He has applied for the appraisal of 12 scientific and technological achievements, and published more than 30 papers. He owns more than 100 patents, and won 2 awards for Social Power - Science and Technology from 2015 to 2019.

方成熏
中国一汽集团
自动驾驶系统工程、功能安全和 SOTIF 专家

中国一汽集团	任职自动驾驶系统工程、功能安全和 SOTIF 专家
GNVGL 公司	任职自动驾驶系统工程、功能安全部门领导
现代汽车集团	任职自动驾驶性能部门任职团队领导
雷诺和尼桑集团	任职自动驾驶电子设计领导
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Specialist of Autonomous Driving Engineering, ISO26262 and SOTIF
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Team Leader, Autonomous Driving Electronics Design in Renault & Nissan Group

Autonomous Driving Electronics Design in TAKATA Group

Junko Yoshida
AspenCore Media
全球联合主编

吉田女士曾任职于日本一家消费电子公司，并积累了 11 年的国际工作经验。随后，她开启了巡回记者的职业生涯，足迹遍及东京、硅谷、巴黎和纽约，并于最近来到了中国，以追踪独家／突发事件，她所撰写的分析性报道深刻精辟。她与来自全球各文化（各语言）背景的人来往接触，因而拥有真正国际化和多文化（多语言）的专业经验。她关注的领域有消费类电子产品、汽车、半导体、新兴技术和知识产权，并且对于商业战略如何引领这些领域的企业收获成功并走向全球具备丰富实践知识。
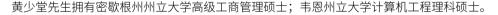
Junko Yoshida
Global Co editor-in-chief
AspenCore Media

Beyond 11 years of international experience in a Japanese consumer electronics company, Yoshida cut her teeth as a roving reporter in Tokyo, Silicon Valley, Paris, New York and more lately in China to find exclusive/breaking stories and write incisive analysis. Her contacts and professional experiences are truly global and multi-cultural (and multi-lingual). Her focus has been in consumer electronics, automotive, semiconductors, in emerging technologies and intellectual property, with a working knowledge of how business strategies enable companies in these areas succeed and go global.

黄少堂
江铃汽车
首席技术官兼总裁助理

黄少堂目前是江铃汽车的首席技术官兼总裁助理。他曾主导广汽集团多款自主品牌乘用车的整车开发工作，包括整车电子电气架构的设计，包含了车载以太网、CANFD、LIN 等等不同网络总线的综合应用。

曾荣获世界汽车工程年会论文评审专家、中国汽车工程学会专家理事、新能源汽车国家大数据联盟理事、中国汽车工业优秀归国人才奖、中国智能网联盟专家理事、广州市荣誉市民、广州市优秀专家、广州市创新领军人才、2017 年度中国汽车工业科学技术奖一等奖、2016 年广州市创新领导人才奖、2016 年广州市产业高端人才项目、2017 年番禺区"产业高端人才"称号、2017 年被聘为北京航空航天大学仪器科学与光电工程学院客座教授和研究员、2018 年被聘为武汉理工大学兼职教授。

黄少堂先生拥有密歇根州州立大学高级工商管理硕士；韦恩州立大学计算机工程理科硕士。

Ted S HUANG
CTO & Assistant President
Jiangling Motors

Huang is currently CTO & Assistant President of Jiangling Motors. He oversaw the whole vehicle development of multiple GAC self-owned passenger vehicle brands. His responsibilities include the design of whole vehicle electrical and electronic architecture, which encompasses the application of network buses like in-vehicle Ethernet, CANFD and LIN.

Huang once served on the paper reviewing panel of the Automobile Engineering Conference, and an expert director of SAE-China, a director of the Chinese National Big Data Alliance of New Energy Vehicle and an expert director of CAICV. He received several honorary titles, including Honorary Citizen of Guangzhou, Guangzhou Excellent Experts, and Guangzhou Innovation Leader. He was honored with a multitude of awards, including the Excellent Returned Talent Award of China Automotive Industry, and the first prize of 2017 China Automotive Industry Science and Technology Award, 2016 Guangzhou Innovation Leadership Award. He was recruited in the 2016 Guangzhou High-end Talent Project, and in 2017, he received the title of Guangzhou Panyu District High-end Talent. In 2017, he was retained as a visiting professor and researcher at the School of Instrument Science and Optoelectronic Engineering of Beihang University. In 2018, he was appointed as an adjunct professor at Wuhan University of Technology.

He receives an EMBA from Michigan State University and an MS in Computer Engineering.

董方亮
英伟达
总监

董方亮就职于 NVIDIA（英伟达），是 NVIDIA 汽车智能与自动驾驶业务的负责人。董方亮先生在人工智能和汽车行业具有丰富的行业经验。董方亮毕业于英国伯明翰大学计算机系。

Frank DONG
Director
Nvidia

Frank Dong works at NVIDIA as head of intelligent and autonomous driving business. Dong has rich experience in artificial intelligence and automobile industry. He graduated from the University of Birmingham with a degree in computer science.

殷承良 博士
上海交通大学
汽车工程研究院副院长

殷承良教授目前是上海交通大学智能网联电动汽车创新中心主任；汽车工程研究院副院长、教授、博士生导师以及汽车电子控制技术国家工程实验室副主任和中国城市治理研究院研究员。

他的主要研究方向是汽车电子控制技术，新能源汽车关键零部件及整车集成与开发，电池管理系统及混合能量存储系统技术，智能网联汽车等。2008 年起，他曾先后担任教育部科技奖励评审专家，科技部、工信部技术评审专家，上海市经济与信息化委员会，上海市新能源汽车专家等。他也曾长期担任上汽集团、东风汽车集团高级技术顾问。殷承良教授分别于 1996 年和 2000 年在吉林工业大学获得车辆工程专业的硕士和博士学位。

Dr. Chengliang YIN
Vice Dean, Institute of Automotive Engineering
Shanghai Jiao Tong University

Dr. Chengliang Yin is director of Intelligent and Connected Vehicle and Electric Vehicle Innovation Center, Shanghai Jiao Tongji University, where he is also the Vice Dean with the Institute of Automotive Engineering and the Vice Director with the National Engineering Laboratory for Automotive Electronic Control Technology. He is also currently an Advanced Technical Adviser with the Shanghai Automobile and Dongfeng Automotive Group.

His research interests include automotive electronics, hybrid electric vehicles and intelligent vehicles. Dr. Yin earned Master's and Ph.D. degrees in vehicle engineering from Jilin University and was awarded the General Motors Innovative Talent in Automotive Industry Award in 2009.

沈骏强 博士
福瑞泰克智能系统有限公司
首席技术官

沈骏强博士是福瑞泰克智能系统有限公司（Freetech）CTO，全面负责公司在 ADAS 和自动驾驶领域的技术规划和产品开发。福瑞泰克是一家智能驾驶系统产品和解决方案供应商。作为创新型公司，它拥有智能驾驶领域全球最高水准的核心知识产权与解决方案，并通过本地化的开发，为中国主机厂提供适应中国场景和消费者习惯的 ADAS 和自动驾驶解决方案。

沈骏强博士于 1999 年毕业于美国奥本大学（Auburn University）电子工程系，获博士学位。毕业后，沈博士任职于德尔福（Delphi）北美电子与安全事业部，开始了其在车载安全系统 ADAS 领域开发的职业生涯。2007 年，沈博士参加了美国 DARPA Urban Challenge，作为进入最终决赛的 11 支队伍之一，与斯坦福、CMU、MIT 等车队同场竞技。

2007 年底，沈骏强博士被外派到德尔福（中国）科技研发中心，担任高级工程经理，在中国建立德尔福主动安全的开发团队。沈博士是中国 ADAS 和自动驾驶领域的老兵，在中国 ADAS 技术的引入、推动和市场开拓方面做了很多开创性的工作。

Dr. Junqiang SHEN
CTO
Freetech Intelligent Systems Co., Ltd.

As the CTO of Freetech Intelligent Systems, Dr. Junqiang Shen is overall responsible for the ADAS and Automated Driving technologies planning and product development. Freetech is an intelligent driving system product and solution supplier. As an innovative company, Freetech owns the world's most advanced core IPs and solutions in the intelligent driving area. Through local development, Freetech strives to develop the ADAS and automated driving products and solutions that are adapted to China traffic conditions and driver behaviors to China OEMs.

Dr. Junqiang Shen graduated from Department of Electrical Engineering of Auburn University. After his graduation, he started his career in ADAS technologies development when he joined Delphi Electronics and Safety division in North America. In 2007, as one of the key developers of IVS team, he participated in DARPA Urban Challenge in US. The IVS team made to the finals, and competed against other 10 teams including Stanford, CMU and MIT.

In the end of 2007, he was expatriated to Delphi (China) Technical Center as a senior engineering manager. He established the Active Safety development team for Delphi in China. As a veteran in ADAS and automated driving area in China, Dr. Shen has done a lot of innovative work in introducing the ADAS technologies into China market.

Michael Krutz
风河日本分公司
总裁

Michael Krutz 拥有 30 余年的工程、服务和一般管理经验，现任风河系统日本分公司的总裁，当前工作生活在日本东京。

在此之前，他担任公司的首席产品官，负责公司的业务部门，包括核心操作系统、互联汽车、云技术和网联。他之前担任风和系统公司汽车解决方案的高级副总裁。

在 2009 年进入风和系统公司之前，他曾任摩托罗拉主管网络业务核心网络部门的副总裁。他也担任过多项涉及嵌入式软件、航天与国防、卫星通讯和电信或网联的工程和服务业务负责人。他持有马凯特大学商业和电子工程 / 计算机科学的学士和硕士学位。

Michael Krutz
President
Wind River Japanese Subsidiary

Michael Krutz has more than 30 years of engineering, services, and general management experience, and is currently the President of WRKK, the Japanese subsidiary of Wind River, and is based on Tokyo, Japan.

Prior to this, he served as the company's chief product officer responsible for the company's business units, including core operating systems, connected vehicle, cloud technologies, and networking. He had previously served as senior vice president for automotive solutions at Wind River.

Prior to joining Wind River in 2009, he was the vice president for the Core Networks Division in Motorola's networks business. He has also held multiple engineering and services leadership positions in embedded software, aerospace and defense, satellite communications, and telecommunications/networking. He holds B.S. and M.S. degrees in business and electrical engineering/computer science from Marquette University.

王 羽
中国人工智能学会智能驾驶专业委员会
副秘书长

王羽，高级工程师，中国人工智能学会智能驾驶专业委员会副秘书长、国际标准化组织道路车辆委员会车辆动力学分委会（ISO/TC22/SC33）WG9 工作组自动驾驶测试场景国际标准制定支撑专家、全国汽车标准化技术委员会智能网联汽车分技术委员会（TC114/SC34）自动驾驶工作组成员、全国信息安全标准化技术委员会（TC260）WG5 工作组成员、国际自动机工程师学会（SAE）会员、华东交通大学客座教授等专业职务，负责 CAAI-IDC 汽车智能化指数及测试评价工作组、中国汽车信息安全监测体系研究。

Yu WANG
Deputy Secretary General
Intelligent Driving Committee of Chinese Association for Artificial Intelligence

Wang Yu, Senior Engineer, Deputy secretary general of the Intelligent Driving Committee of Chinese Association for Artificial Intelligence（CAAI-IDC）,the Vehicle Dynamics Subcommittee of the International Organization for Standardization Road Vehicle Committee（ISO/TC22/SC33）WG9 Working Group Automated Driving Test Scenario International Standards Development Supporting Expert, National Automotive Standardization Technical Committee Intelligent Networking Automotive Sub-Technical Committee (TC114/SC34) Automated Driving Working Group Expert, National Information Security Standardization Technical Committee (TC260) WG5 working group experts, members of the International Society of Automated Mechanical Engineers (SAE International),Visiting Professor of East China Jiaotong University, Director of Testing and Evaluation Group for Automotive Intelligence Index, Director of China Automobile Information Security Monitoring System and Service Platform.

Matt Thrasher 博士
福特自动驾驶汽车
亚太区自动驾驶汽车开发部门主管

Matt Thrasher 是福特自动驾驶汽车技术团队的负责人。他曾就读于哈佛大学和得克萨斯大学奥斯汀分校，学习物理专业。他的团队负责拓展福特在中国自动驾驶汽车产业的市场。

Dr. Matt Thrasher
Section Supervisor, Autonomous Vehicle Development, Asia-Pacific
Ford Autonomous Vehicles LLC

Matt Thrasher leads Ford's AV technical team in China. He received his education in physics from Harvard University and The University of Texas at Austin. His team is responsible for Ford's growing footprint in China's AV industry.

Timo van Roermund
恩智浦半导体
汽车安全技术总监

Timo van Roermund 目前负责 NXP 的汽车安全团队。NXP 是安全互联汽车领域的全球技术领导者，在雷达、车用信息娱乐系统、汽车安全访问、车身和车载网络、安全和动力总成方面提供市场领先的产品。在 NXP 任职期间，Timo 负责汽车安全战略、技术、解决方案和流程。

Timo 在嵌入式设备的安全应用方面具备丰富的专业知识，包括 V2X 车联网通讯系统、车载 E&E 网络、架构和系统、IoT 装置、手机和可穿戴设备。他经常在有关汽车网络安全的国际会议上进行演讲，并担任相关项目委员会成员，对产业联盟和规范制定做出许多贡献。Timo 拥有埃因霍芬理工大学计算机科学与工程理学硕士学位。
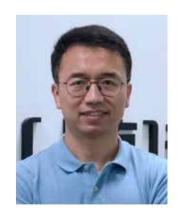
Timo van Roermund
Technical Director, Automotive Security
NXP Semiconductors

Timo van Roermund is leading NXP's automotive security team. NXP is the global technology leader in the secure connected car with a market leading product portfolio in radar, car infotainment, secure car access, body and in-vehicle networking, safety, and powertrain. In his role in NXP, Timo is responsible for the automotive security strategy, technology, solutions, and processes.

Timo has deep expertise in applied security for embedded devices, such as Vehicle-to-X communication systems, in-vehicle E&E networks, architectures and systems, IoT appliances, mobile phones and wearable devices. He is a regular speaker, and member of program committees, at international conferences on automotive cybersecurity and he has made various contributions to industry consortia and to standards development. Timo received the MSc degree in Computer Science and Engineering from the Eindhoven University of Technology.

唐 亮
威盛电子（中国）有限公司
高级技术总监

唐亮，毕业于复旦大学计算机科学系，在威盛担任高级技术总监，主持研究多项国家科技重大专项课题，长期从事计算机软件研发并取得多项研究成果，对于人工智能、计算机视觉、图形加速、底层硬件驱动、操作系统开发等，有着丰富的经验，是该领域的技术带头人之一。

Talen TANG
Senior Technology Director
VIA Technologies (China) Co., Ltd.

Mr. Tang graduated from Fudan University with a degree in Computer Science and is currently Senior Technology Director at VIA. He is responsible for investigating key technology issues across different countries, and is involved in computer software development that lead to many breakthroughs. Mr. Tang is also a leading pioneer in AI, computer vision, graphics acceleration, low-level driver development, and operating system development.

Luca Castignani 博士
MSC Software
自动驾驶产品战略师

在获得了汽车动力学博士学位后，Luca 在法拉利汽车公司工作了十多年，从事仿真和道路测试工作。在悬架设计和车身 NVH 特性方面都积累了丰富的经验。2016 年，LUCA 加入了 MSC，担任多体系统的高级产品设计师。自 2017 年起，他被任命为自动驾驶产品战略师。利用收购的公司（Vires VTD）和海克斯康集团层面的资源，为 ADAS 和自动驾驶需求的客户设计和实施端到端的解决方案。

Dr. Luca Castignani
Autonomous Driving Product Strategist
MSC Software

After receiving his PhD in Vehicle Dynamics, Luca Castignani worked for more than ten years in Ferrari Auto serving both in simulation roles and road testing. Having gained a significant experience both in suspension design and in the NVH attributes of vehicle body.

In 2016 Luca Joined MSC Software as a senior Product Designer for multibody systems and since 2017 he has been appointed as Product Strategist for Autonomous Driving. Leveraging acquired companies (Vires VTD) and group synergies (at Hexagon level) he is designing and implementing the end-to-end solution offering of MSC Software to ADAS and Autonomous Driving needs.

Torsten Kluge
dSPACE GmbH
集团工程经理

Torsten Kluge，集团工程经理，在汽车零部件的硬件在环（HIL）仿真和建模等各方面具有广泛的经验，包括动力系统、混合／电力、底盘和 ADAS/AD。在维护多 HIL 配置和多车辆平台仿真模型方面具有丰富的经验。有丰富的团队领导经验，能同时处理多个不同优先级和截止日期的项目。技术论文和文章作者。

Torsten Kluge
Group Manager Engineering
dSPACE GmbH

Torsten Kluge, Group Manager Engineering with broad experience in all aspects of Hardware-in-the-Loop (HIL) simulation and modeling of vehicle components - Powertrain, Hybrid/Electric, Chassis and ADAS/AD. Experience in maintaining multiple HIL configurations and simulation models for multiple vehicle platforms. Seasoned in group leading, handling multiple projects with varying priorities and deadlines. Author of technical papers and articles.

Tsuyoshi Toyama 博士
丰田汽车
首席研究员

Tsuyoshi Toyama 于 2012 年从横滨国立大学研究生院取得信息科学博士学位，在该校的重点研究方向是信息安全。他在一所高校从事了一年的研究工作，之后于 2013 年加入了丰田信息技术中心。自 2019 年以来，他就职于丰田汽车公司并参与研发。

当前汽车领域的一些热门议题能够为用户带来很大便利，如互联汽车和自动驾驶汽车等；但这些议题背后也可能隐藏着威胁互联网安全的潜在风险。他不仅致力于排除已经出现的威胁，同时也关注解决未来威胁的方法。现在，他除了进行研究，也十分重视汽车网络安全专家的培养。

Dr. Tsuyoshi Toyama
Principal Researcher
Toyota Motor Corporation

Tsuyoshi Toyama acquired his Ph.D in information science at Yokohama National University Graduate School in 2012. At the university, he studied information security as the main theme. After undergoing research work at a university for one year, he joined Toyota InfoTechnology Center in 2013. From 2019, he have worked at Toyota Motor Corporation, and engaged in research and development.

Current hot topics such as Connected Car and Autonomous Vehicle in the automotive industry bring high convenience to users; however, there is a possibility that the threats of cybersecurity are potentially hidden in any of them. He is not only working on existing threats, but also tackling future threats. Currently, he is not only working on research but also focusing on developing experts of cyber security of vehicles.

云 朋
百度
Apollo 汽车信息安全实验室主任

云朋，历任百度云安全部首席架构师，自动驾驶首席安全架构师，Apollo 信息安全实验室主任，18 年信息安全经验，专注于信息安全和数据分析领域，对企业安全、车联网及人工智能领域的安全防护有深入研究及实践，著有 30 多篇涵盖云计算、数据分析及人工智能领域信息安全的文章及多个相关专利。

Peng YUN
Director of Apollo Vehicle Cybersecurity Lab
Baidu

Peng Yun has been the Chief Architect at Department of Cloud Security, Chief Security Architect of Autonomous Vehicle, and Director of Apollo Information Security Laboratory at Baidu. With 18 years' experience, he is an expert in information security and data analysis, with profound know-how and practice in security protection in company security, telematics, and AI. He has published over 30 articles on cloud computing, data analysis, and AI security, and holds many related patents.

Tzvika Shneider
哈曼
汽车网络安全业务部门研发总监

Tzvika Shneider 是三星电子全资子公司哈曼（HARMAN）汽车网络安全业务部门的研发总监。哈曼为世界各地的汽车制造商、消费者和企业设计和制造网联产品和解决方案，包括网联汽车系统、网络安全解决方案、视听产品、企业自动化解决方案和支持物联网的服务。Tzvika 于 2016 年加入哈曼的汽车网络安全业务部门（基于 TowerSec 收购的基础上设立）。

Tzvika 在信息技术和网络安全领域拥有超过 14 年的从业经验，他不仅是一名研究人员，还是研发和产品团队的高级领导者，专门从事与情报安全相关的创新项目。Tzvika 的专长包括：建立高效和具有创新精神的研发团队、开展情报和网络安全研究。

在加入哈曼之前，Tzvika 曾担任 IT、移动和蜂窝通信领域初创公司的研发副总裁和总经理。在此之前，Tzvika 在以色列国防军的一个精英情报部门担任了 10 年的军官，并同时担任 IT、情报和网络安全领域的高级研发管理职务。

Tzvika 拥有特拉维夫大学计算机科学学士学位和行政工商管理硕士学位。

Tzvika Shneider
R&D Director, Automotive Cybersecurity Business Unit
HARMAN

Tzvika Shneider is the R&D Director, Automotive Cybersecurity business unit at HARMAN, a wholly-owned subsidiary of Samsung Electronics Co., Ltd. HARMAN designs and engineers connected products and solutions for automakers, consumers, and enterprises worldwide, including connected car systems, cyber security solutions, audio and visual products, enterprise automation solutions and services supporting the Internet of Things. Tzvika joined HARMAN's Automotive Cybersecurity Business Unit (build upon TowerSec acquisition) in 2016.

Tzvika has over 14 years of experience in IT and cybersecurity both as a researcher and as a senior leader of R&D and product groups specializing in intelligence security-related innovation projects. Among Tzvika's unique expertise are: building effective and innovative R&D groups, intelligence research and cybersecurity

Before joining Harman, Tzvika served as VP R&D and General Manager in startups in the fields of IT, Mobile and Cellular Communication. Prior to that Tzvika spent 10 years as an officer at an elite intelligence unit of the Israeli Defense Forces, where he held senior R&D management roles in the field of IT, intelligence and cybersecurity.

Tzvika holds a B.Sc. in Computer Science and an Executive MBA from Tel Aviv University.

Wolfgang Sienel 博士
ETAS ESCRYPT
信息安全解决方案销售副总裁

Wolfgang Sienel 博士自 1997 年起一直就职于 ETAS 公司，专注产品管理、工程和在德国、印度、日本、中国的销售。自 2018 年 1 月起，他开始负责 ETAS 网络安全解决方案的销售，也就是命名为 ESCRYPT 的这款产品。

在加入 ETAS 之前，Sienel 博士在位于奥博珀法芬霍芬的德国航空航天中心任职，担任机器人与系统动力学研究所的研究工程师。他也曾在国际知名的科学杂志上发表过多篇有关鲁棒控制的文章。

Sienel 博士 1989 取得专科学位，1994 年获博士学位，均来自德国慕尼黑大学电子工程及信息技术学院。2015 年 6 月，他获得了 JSAE（日本汽车工程学会）会员奖，是第一位因自身和其公司对于日本汽车行业贡献获此殊荣的欧洲公民。

Dr. Wolfgang Sienel
Vice President Sales Cyber Security Solutions
ETAS ESCRYPT

Dr. Wolfgang Sienel is with ETAS since 1997 working in the areas of product management, engineering, and sales in Germany, India, Japan, and China. Since January 2018, he is in charge of sales of ETAS cyber security solutions branded under the name ESCRYPT.

Before joining ETAS, Dr. Sienel was with the Institute of Robotics and System Dynamics at the German Aerospace Center in Oberpfaffenhofen, Germany, as research engineer. He is author of numerous articles on robust control published in internationally renowned scientific magazines.

Dr. Sienel earned his diploma degree in 1989 and his doctoral degree in 1994, both from the Faculty of Electrical Engineering and Information Technology at the Technical University of Munich, Germany. In June 2015, he received the JSAE (Society of Automotive Engineers of Japan) fellow award as the first European citizen in recognition of his and the company's contribution to the automotive industry in Japan.

José Almeida
SYSGO
汽车事业部主管

José Almeida 拥有电子科学工程学位，目前担任 SYSGO 汽车事业部的主管。他代领团队负责定义和交付物理和 / 或信息安全关键应用的汽车产品。

在他负责管理 SYSGO 全球技术销售团队之前，他为实时操作系统提供软硬件架构咨询，尤其是 PikeOS 和 ELinOS 嵌入式 Linux

José 先前就职于 Thales Computers 公司，负责协调公司亚太地区和北欧地区的所有技术售前活动。

José Almeida
Director Business Line Automotive
SYSGO

José Almeida holds an Engineering degree in Electronic Sciences and is Director Business Line Automotive of SYSGO. He manages a team in charge of definition and implementation of automotive products addressing safety and/or security critical applications.

Before he was managing SYSGO technical sales team customers worldwide, providing software / hardware architecture consulting for real-time operating systems, in particular PikeOS and ELinOS Embedded Linux.

José previously worked with Thales Computers, where he was in charge of coordinating all technical pre-sales activities in Asia, the Pacific rim and Northern Europe.

吕一平
腾讯科恩实验室
总监

吕一平，2016 年加入腾讯，18 年信息安全行业经验，主要负责腾讯科恩实验室国际和国内行业安全研究和技术合作。在加入腾讯前，曾就职于微软。

Samuel LYU
Director
Tencent Keen Security Lab

Samuel Joined Tencent in 2016, 18 years of experience in the cyber security field, responsible for Tencent Keen Security Lab international and domestic industry security research and technical cooperation. Before joining Tencent, worked for Microsoft.

杨益锋
是德科技
ISG 解决方案事业部高级产品经理

杨益锋，负责 L23 产品的规划，推广及主要客户拜访及需求的收集。二十多年通信行业的经验，主要专注在 IP 网络，SDNFV, 汽车以太及安全等方面。在系统集成商，网络厂商及测试厂商担任售前，售后及产品技术相关职位。参加过国内国外的国家骨干网络建设，最近主要参与新兴技术 SDNFV，AVB/TSN 及高速以太网的规范，产品及方案。早期获得 CCIE 和 JNCIE 认证。

Yifeng YANG
Senior Product Manager of ISG Solution Group
Keysight

YANG is responsible for the planning, promotion and collection of major customers' requirements. More than 20 years of experience in IT and communications industry, mainly focusing on IP networks, SD NFV, Automotive ethernet and Automotive Cyber Security. Worked for System integrators, network vendors and test vendors serve as pre-sales, after-sales and product technology related positions. Participated in the construction of national backbone networks at home and abroad, and recently participated in the specifications, products and solutions of emerging technologies SDNFV, AVB/TSN and high-speed Ethernet. CCIE and JNCIE certification.

萧 海
广汽硅谷研发中心
资深首席架构师

萧海，拥有二十多年高科技、大系统的 R&D 和产品架构及软硬件系统的研发设计及领导经验。作为资深智能网联、信息功能安全、AI 机器学习及自动驾驶技术专家，他曾活跃和就职于多家中美高科技通讯、安全及人工智能企业。萧海先生曾参与领导了中国第一代高速交换路由器的研制开发，推进了自适应的微区网络及其功能的智能自动化控制的安全架构，并参与了英伟达高端 AI 芯片的深度学习模型开发及应用推广工作。现作为广汽硅谷研发中心的首席构架师，在推进仿真及算法研究的同时，他重点专注于车网安全、感知及控制安全、AI 及智能驾驶等领域的系统和架构设计。

萧先生拥有物理学硕士学位，同时也是斯坦福大学人工智能方向的研究生。他拥有多项国际专利及安全、感知及智能相关领域的研究论文。

Hai XIAO
Senior Principal Architect
GAC R&D Center Silicon Valley

Hai Xiao is seasoned technology expert in Networking, Security, Data Mining, AI and Intelligent Driving. With decades R&D experience in product architect, system software and research, He worked with technology entrepreneurs from the earliest MVP to explosive growth, and sizable enterprises in both GHM and SF bay areas.

Xiao led and pioneered R&D of China's very first high-speed switching router, he also pushed adaptive security architecture of micro-segmentation with intelligent network control. With extensive experience from Huawei, Cisco, Juniper, illumio and nVIDIA, Hai dedicates to Security, AI learning and intelligent system design in AD simulation and ITS applications, V2X and ICV architectures at GAC R&D Center, Silicon Valley.

Xiao holds M.S. degree in Physics and was a graduate in Artificial Intelligence from Stanford University. He has several US patents granted and is an active member to several top research & high-tech venues, in cybersecurity, AI & Autonomous Driving.

Madeline Cheah 博士
HORIBA MIRA
网络安全创新部主管

Madeline Cheah 博士是 HORIBA MIRA 的网络安全创新部主管，负责传统汽车和自动驾驶车辆的网络安全研究。在考文垂大学获得汽车网络安全博士学位后，她开始了目前的工作。她的贡献发表在同行评议的论文中，并且是网络安全会议的定期演讲嘉宾。她的研究方向包括黑盒测试、渗透测试和数字取证。她还拥有计算机取证理学硕士和生物化学荣誉理科学士学位。在入职 HORIBA MIRA 前，她在网络安全方面做了三年的讲师。

Dr. Madeline Cheah
Cyber Security Innovation Lead
HORIBA MIRA

Dr. Madeline Cheah is currently Cyber Security Innovation Lead at HORIBA MIRA, with responsibility for automotive and autonomous vehicle cyber security research at the company. She started her current role after having earned a PhD in automotive cyber security at Coventry University. Her contributions have been published in peer-reviewed papers and she is a regular speaker at cybersecurity events. Her research interests include black-box testing, penetration testing and digital forensics. She also has an MSc in Forensic Computing and a BSc (Hons) in Biochemistry. Before starting at HORIBA MIRA, she was lectured on cybersecurity for three years.

刘健皓
三六零科技有限公司
智能网联汽车安全事业部负责人

刘健皓，主要从事汽车信息安全研究工作，参与细化《中国制造 2025》绿皮书汽车领域智能网联汽车路线图信息安全技术路线的规划，在国际知名网络安全会议中发表自动驾驶汽车信息安全研究成果，公布了对自动驾驶汽车传感器、控制器及算法的攻击实例，并提出安全防护方法。使我国自动驾驶汽车信息安全处于国际领先地位，受到知名媒体 forbs、wired 媒体报道。受聘于多家机构的安全专家。

Jianhao LIU
Director, ICV Cyber Security
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Mr. Liu Jianhao is mainly engaged in information security research work. He participated and made great contribution to the guide book of Chinese National Plan-" Made in China 2025 " in Automotive field , including refining route planning for auto security in connected vehicle roadmap. Mr. Liu published his latest research of automated driving's information security issues during global leading cyber security conferences, and published the hacker attack cases on automated driving vehicle's sensors, controllers, algorithms, etc. More, he proposed kinds of security protection methods which lets China gain the international leading position of automotive information security industry. He had also been reported by many well-known media such as FORBS and WIRED, etc and is hired as security expert in several agencies.

Kirill Kruglov
卡巴斯基实验室
未来技术高级开发员

Kirill Kruglov 是 Kaspersky 实验室工业控制系统网络应急响应小组（ICS CERT）的主要 ICS 威胁研究员。他在网络安全领域有超过 10 年的经验。如今，他主要领导 ICS 威胁的相关研究工作，协调威胁捕获活动，并管理 ICS CERT 基础设施和服务的开发工作。同时，Kirill 负责交付高质量的威胁情报产品，包括关于紧急 ICS 威胁的出版物和警报、ICS 威胁数据提要、客户 / 行业 / 地区 / 特定威胁的威胁情报报告等。

Kirill Kruglov
Senior Developer at Future Technologies
Kaspersky Lab

Kirill Kruglov is a leading ICS threat researcher in Kaspersky Lab's Industrial Control Systems Cyber Emergency Response Team (ICS CERT). He has over 10 years of experience in the cyber security field. Today he leads research on ICS threats, coordinates threat hunting activities and manages development of ICS CERT infrastructure and services. At the same time Kirill is responsible for delivering high quality threat intelligence products including publications and alerts on urgent ICS threats, ICS threats data feeds, customer/industry/region/threat specific threat intelligence reports, etc.

Emmanuel Arbaretier
空中客车 APSYS
产业创新经理

Emmanuel Arbaretier 毕业于巴黎中央理工学院（Ecole Centrale de Paris），后进入泰雷兹（THALES，前 THOMSON）工作，负责将可靠性、可用性、可维护性及安全性（RAMS）和综合后勤保障（ILS）美军标准转换为法国标准。随后，他参与了 SOFRETEN 公司的创立，并在 1997-2003 年担任公司 CTO。在 SOFRETEN 他开发了两个用于可靠性和后勤保障分析的基于模型的工具。

2004 年起受聘于 EADS APSYS（现 Airbus APSYS），并创立了仿真平台部门，基于 Altarica 语言重新开发 SIMFIA 性能仿真平台、SIMLOG 维护优化、全生命周期成本仿真和管理软件以及用于支持实时 / 嵌入式基于模型的故障诊断和检修过程软件 DIAGSYS。随后，他开始掌管创新和软件部门，主要负责基于模型的系统工程和安全分析以及用于运营效能跟进和提升的集成信息系统。

目前他担任新业务部门负责人，包括创新咨询和服务、决策制定平台以及它们在轨道交通、汽车和能源方面的应用。作为 APSYS 公司技术创新主管，他负责了法国技术研究所（IRT-SYSTEMX）在自动驾驶车辆（SVA=Système Véhicule Autonome）领域的研究项目中的安全工作包。他同时也负责管理一个工程研究项目 VEDECOM 的多个工作任务，包括初步安全分析 PSA、案例生成和使用 SIMFIA 进行行为建模。

Emmanuel Arbaretier
Industrial Innovation Manager
Airbus APSYS

Graduated from Ecole Centrale de Paris, Emmanuel Arbaretier began his carrer in THALES (formerly THOMSON) where he was in charge of the adaptation of RAMS and ILS US Military Standard to the french group; then he participated in the creation of SOFRETEN where he developed two Model Based Workbenches in the field of Dependability and Logistic Support Analysis; he has been CTO of SOFRETEN for 5 years between 1997 and 2003.

Hired in EADS APSYS in 2004, he developed a Simulation Workbench Department, where he redeveloped SIMFIA performance simulation workbench based on Altarica language, SIMLOG workbench for maintenance optimization, and Life Cycle Cost simulation and management, and DIAGSYS supporting real time / embedded model based troubleshooting and diagnosis process. He was then responsible for Innovation and Software Department and especially works on Model Based System Engineering and Safety Analysis, as well as Integrated Information System for Operational Performance follow up and enhancement.

Currently he is in charge of New Business Unit including Innovative Consultancy and Services, Decision Making workbenches and their application to Railway, Automotive, and Energy issues.

As an innovation manager, he has been responsible for Safety work package of a Research Program developed by French Research Institute (IRT-SYSTEMX) about Autonomous Vehicles (SVA=Système Véhicule Autonome); he has also been managing for two years one research engineering project in VEDECOM in different tasks involved in Preliminary Risk Analysis, Case Generation and Behavioural Modeling with SIMFIA.

钟 伟
阿里巴巴 AliOS 业务安全负责人
阿里云安全总监

钟伟是阿里巴巴 AliOS 业务安全负责人、阿里云安全总监，在 AliOS 不断发展演变的进程中先后负责操作系统防御能力建设、供应链攻击技术对抗和互联网汽车安全保障等工作，在从系统层面构建面向互联网设备的安全能力和机制上有丰富的实战经验。

Wei ZHONG
Head of Security for AliOS
Head of Alibaba Cloud

Zhong Wei is Head of Security for AliOS and Head of Alibaba Cloud. Throughout the evolution of AliOS, he has been successively put in charge of developing the defense capability of operating system, anti-attack technology for supply chain and security for connected vehicles, etc. He also has extensive practical experiences on developing internet device-oriented security capability and mechanism from the system level.

朱锦涛
华为云
车联安全标准总监

朱锦涛，现任华为云车联安全标准总监，负责车联云和 V2X 等的安全技术研究，并参与国内外 5GAA、CCSA、C-ITS 等标准产业组织的相关标准化工作。

Jintao ZHU
Director of IoV Safety Standards
Huawei Cloud

Zhu Jintao is currently Director of IoV Safety Standards of Huawei Cloud, in charge of the research on safety technology of V2Cloud and V2X. He also participates in the standardization works of 5GAA, CCSA, C-ITS and other industrial standard organizations at home and abroad.

Jhenukumar Subramaniam

吉利研究院
基础技术工程师

Jhenukumar Subramaniam 先生是一名拥有 13 年经验的汽车专业人士，专业领域是汽车网络（以太网）及信息安全，目前担任吉利研究院网络安全工程师。

2018 年 11 月至今	担任吉利研究院并担任网络安全工程师。
2015 年 9 月 -2018 年 9 月	担任博世（芜湖）以太网交付和安全解决方案架构师
至 2015 年 1 月	在博世印度担任大众汽车需求工程师
2011 年 10 月 -2014 年 11 月	福特 F150 CXXX 系列多功能显示器的验证首席工程师，专门从事测试自动化
至 2011 年 9 月	在捷豹路虎下一代信息娱乐项目中担任 ADAS HMI 的需求工程师
2009 年 -2010 年	Jhenukumar Subramaniam 先生取得英国 COVENTRY 大学汽车工程硕士学位

Jhenukumar Subramaniam

BaseTech Engineer
Geely Automotive Research Institute

Jhenukumar Subramaniam is an automotive professional with 13 years of experience main focus area is automotive networking (Ethernet) and security.

Nov 2018- Till now	Currently working as Cybersecurity Engineer in Geely Research Institute
Sept 2015- Sept 2018	Ethernet delivery and Security Solutions Architect in Bosch, Wuhu, China
Till Jan 2015	Requirements Engineer for Volkswagen Clusters, Bosch, India
Oct 2011-Nov 2014	Validation Lead Engineer for FORD F150 CXXX Series Multi Functional Display Unit, Specializing in Test Automation
Till Sep 2011	Worked for JLR as Requirements Engineer for ADAS HMI in Next Generation Infotainment Project
2009-2010	Studied Masters (MSc) in Automobile Engineering from COVENTRY UNIVERSITY, UK

罗璎珞
国汽（北京）智能网联汽车研究院有限公司
总监

罗璎珞，CISSP，曾就职于中国信息通信研究院、诺基亚等机构与公司，从事网络安全与智能终端制造行业十余年，多次承担各行业安全风险评估、大型安全防护系统规划设计项目。目前主要从事智能网联汽车信息安全系统构建与检测验证，以及标准化工作。

Diana LUO
Director
China Intelligent and Connected Vehicles (Beijing) Research Institute Co., Ltd.

Diana, CISSP, dedicated to network security and mobile terminal R&D areas for more than 10 years at NOKIA and CAICT, led and involved many information security evaluation projects and security system design and implementation projects. Currently focus on ICV security system design, validation and standardization.

董 浩 博士
优策联合科技（北京）有限公司
创始人兼总经理

董浩先生 2003 年毕业于清华大学电子工程系，并继续在清华大学微电子所深造，于 2010 年 1 月获得博士学位。

于 2012 年 4 月加入 TÜV 南德，担任大中华区汽车服务部功能安全部门经理，负责管理与开拓大中华区汽车功能安全，ASPICE 等业务。

于 2016 年底创立优策联合科技（北京）有限公司，提供基于功能安全和 ASPICE 的培训、咨询、评估以及认证服务。

Dr. Hao DONG
Founder & General Manager
Utcer

Dong Hao graduated from Tsinghua University's Department of Electrical Engineering in 2003, and continued to study in the Institute of Microelectronics at the same university. He received his doctorate in January 2010.

In April 2012, he joined TÜV SUD as Manager of Functional Safety Division of Automotive Service Department, Greater China, responsible for managing and developing automotive functional safety and ASPICE businesses in the region.

He established Utcer at the end of 2016 to provide training, consulting, evaluation and certification services about functional security and ASPICE.

Juan R. Pimentel 博士
国际咨询师

Juan R. Pimentel 博士目前是国际咨询师，他退休前在美国凯特林大学担任计算机工程教授。他曾撰写过多本有关工业互联网、多媒体系统和安全关键汽车系统的著作。此外还积极从事北美、南美、欧洲和亚洲地区的大量国际咨询服务和专业培训。他还是汽车系统、工业通讯和物联网相关的侵权案件中的鉴定证人。

Pimentel 博士曾在全球多家科研机构从事科研活动，如德国的 Franuhofer 学院、法国的计算机科学与自动化研究院（INRIA）、意大利的帕多瓦大学、西班牙的马德里科技大学和马德里卡洛斯三世大学、哥伦比亚的洛斯安第斯大学和秘鲁的工程技术大学。2007 年因其在工业通讯系统和汽车系统中的杰出贡献荣获凯特林大学颁发的"杰出研究员奖"。曾在多家国际会议与期刊（主要是 IEEE 和 SAE）上发表 86 篇以上的同行评审论文。

作为弗吉尼亚大学 1980 年的毕业生，他的其他成就还包括与西门子共同开发 Profibus 的应用层以及 FlexCAN——一个针对安全关键应用的基于 CAN 的可依赖架构。在最近几年内，他参与了多个自动驾驶汽车的相关项目，包括设计、模拟、试验、功能安全和开发在线培训材料等。他还在 SAE 和通用汽车合作组织的 AutoDrive 自动驾驶汽车竞赛中担任凯特林大学团队的顾问。他最近参与的一个项目是开发一套达到充分安全等级的自动驾驶汽车的设计技术和方法。

Dr. Juan R. Pimentel
International Consultant

Dr. Juan R. Pimentel is an international consultant who recently retired from Kettering University where he was a Professor of Computer Engineering. He has written books on industrial networking, multimedia systems, and safety-critical automotive systems. Dr. Pimentel has also performed extensive international consulting and conducted professional training courses in North and South America, Europe, Asia, and the Middle East. He is an expert witness on patent infringement cases involving automotive systems, industrial communications, and IoT.

Dr. Pimentel has performed research at institutions around the world such as the Franuhofer Institute, Germany; INRIA, France; University of Padova, Italy; Universidad Polictecnica de Madrid and Universidad Carlos III de Madrid, Spain; Universidad de los Andes, Colombia; and UTEC, Peru. In 2007 he received the "Distinguished Researcher Award" from Kettering University for contributions in the area of industrial communication systems and automotive systems. He has written over 86 peer reviewed papers at international conferences and Journals, primarily the IEEE and SAE.

As a 1980 graduate of the University of Virginia, additional accomplishments include the co-development of the application layer for Profibus (with Siemens), and the development of FlexCAN, a CAN-based dependable architecture for safety-critical applications. In the last few years he has been involved with various projects dealing with self-driving vehicles including design, simulation, testing, functional safety, and developing online training materials. He is a faculty advisor to the Kettering University team participating in the AutoDrive autonomous vehicle competition organized by SAE International and General Motors. One of his latest projects involve the development of techniques and methodologies to design self-driving vehicles with a sufficient level of safety.

Mohamed Tlig
IRT SystemX
研究员、研发团队主管

Mohamed Tlig 是 IRT SystemX 的研究员和研发团队主管。

他取得了巴黎第九大学计算机科学硕士学位和法国洛林大学计算机科学博士学位。

他的主要研究内容为应用于自动驾驶汽车的优化技术和形式化方法。

Mohamed Tlig
Researcher & R&D Team Leader
IRT SystemX

Mohamed Tlig is Researcher and R&D team leader at the Technological Research Institute SystemX, France.

He received an M.Sc. in computer science from Université Paris-Dauphine, and a Ph.D. in computer science from Université de Lorraine.

His research interests include optimization techniques and formal methods applied on autonomous vehicles.

Julien Niol
空中客车 APSYS
复杂系统非正常行为建模工程师

Julien Niol 是复杂系统非正常行为建模工程师。Julien 在航空领域有多年工作经验，目前主要参与空中客车 APSYS 和法国技术研究所 SystemX 合作的自动驾驶汽车项目。他的主要工作是通过基于模型的安全分析以及仿真来识别会影响安全的关键失效。模型搭建和分析是通过基于 AltaRica 语言的软件工具 Simfia 来完成的。

Julien Niol
Engineer in Modeling Dysfunctional Behavior of Complex Systems
Airbus APSYS

Julien Niol is an engineer in modeling dysfunctional behavior of complex systems. Julien has worked in aeronautics and now on autonomous vehicles jointly with Apsys-Airbus and IRT SystemX. His work is to identify safety critical failures through model-based safety assessment an simulation in order to ensure that safety requirements are met. Models are based on AltaRica language and exploited in tool Simfia.

Antonio Priore
ARM
功能安全总监

Antonio Priore 是 ARM 公司的功能安全总监。他现在在 ARM 公司领导功能安全流程和战略，负责跨各个项目支持多项安全标准（如 ISO 26262、IEC 61508、DO-254、DO-178C 等）。Antonio 是一位特许工程师，在功能安全工程领域拥有 10 年工作经历，涉及汽车、航天、工程和铁路等各个领域。他曾撰写过 2 篇论文，并在 SAE 担任审稿人。曾获意大利比萨大学电子工程专业硕士学位。

Antonio Priore
Director of Functional Safety
ARM

Antonio Priore works for Arm as Director of Functional Safety. He's leading the functional safety processes and strategy in Arm where he is responsible for supporting multiple safety standards (e.g. ISO 26262, IEC 61508, DO-254, DO-178C, etc.) across different projects. Antonio is a Chartered Engineer with a career spanning a decade in Functional Safety Engineering across different domains like Automotive, Aerospace, Industrial and Railway. He is the author of two papers and works as a reviewer for the SAE. Antonio holds a Master's Degree in Electronic Engineering from the University of Pisa, Italy.

Wolfgang Berns 博士
ROSAS 中心（瑞士弗里堡）
院长

Wolfgang Berns 毕业于航空工程专业并取得博士学位（推进系统测试设备控制）；第一份工作从事飞行模拟系统开发；1991 年罗罗航空发动机公司成立于德国时加入该公司（此前为宝马集团劳斯莱斯公司），并参与开发当时全新的 BR700 系列航空发动机；他曾在蒙特利尔（加拿大）参与燃气涡轮检测，后于 2006 年在瑞士阿尔斯通电力（发电用燃气涡轮）成立了自己公司，主要从事安全和可靠性工程业务。2015 年起，他开始担任位于弗里堡（瑞士）的应用科学大学教授，兼任 ROSAS 稳健与安全系统研究院院长，该研究院是瑞士非常重要的一家安全和可靠性工程研究机构。

Dr. Wolfgang Berns
Director
ROSAS Center Fribourg

Wolfgang Berns graduated in aerospace engineering; doctorate (propulsion system test facility controls); first professional experience in flight simulation systems development; he joined, when established in 1991, the company Rolls-Royce engines in Germany (formerly BMW Rolls-Royce) to be part of the development of the new BR700 series aero engine family; after engagements in Montreal (Canada) in the gas turbine testing business, and in Switzerland at Alstom Power (gas turbines for power generation) he founded in 2006 his own enterprise for safety & reliability engineering. In 2015, he became Professor at the University of Applied Sciences in Fribourg (Switzerland) and Director of the Robust and Safety Systems institute ROSAS, a unique competence center in safety and reliability engineering in Switzerland.

Stanislav Lincer
长城汽车
功能安全开发总监

Stanislav Lincer，毕业于布拉格捷克技术大学，职业生涯始于2003年，担任电气硬件开发工程师。随后进入到汽车行业，致力于电池管理系统的软件开发。由于功能安全的全面发展，从 2008 年开始，进入功能安全领域，德国工作七年期间，先后负责德国奥迪的高压电池系统的功能安全工作和宝马的电驱动系统的整体安全开发工作，最终加入长城汽车担任功能安全总监，支持公司向国际市场的业务扩展。

Stanislav Lincer
Functional Safety Director
Great Wall Motor

Stanislav Lincer, graduated from Czech Technical University in Prague, started his career in 2003 as Electronics Hardware development engineer and later he joined automotive industry as Software developer for battery management system. Due to its holistic approach, Functional Safety is fascinating Stanislav since 2008. During his 7 years stay in Germany, he was responsible for Functional Safety of High Voltage Battery System at Audi and Safety of Electric Powertrain at BMW. Finally Stanislav joined Great Wall Motor Co as Functional Safety Director to support company expansion worldwide.

Hakim Nyampa
必维国际检验集团
汽车安全项目经理

Hakim Nyampa 拥有多年汽车与航空航天领域的功能安全与可靠性经验。曾参与自动驾驶 L2-L4 等级的电子控制单元研发，并曾担任 Tier1 供应商和整车厂商变速箱控制器等的安全工程师或安全经理。现从事 ISO 26262 培训和领导汽车安全证明和展示、认证高 ASIL 等级安全相关产品等工作。为 ISO 26262 和 ISO 21448 标准国际委员会成员。

Hakim Nyampa
Automotive Safety Project Manager
Bureau Veritas Exploitation

Hakim Nyampa, years of experience in functional safety and reliability for automotive and aerospace systems. Participated in electronic unit controllers' development for Level 2, 3 & 4 automation level, for gear box controllers as safety manager and engineer for tiers one supplier and car manufacturer. Conducts ISO 26262 training and leads automotive safety demonstration. Certifies high ASIL safety related product. Members of ISO 26262 and ISO 21448 International Committees.

曲元宁
博世苏州底盘事业部
功能安全和网络安全能力中心 高级经理

2009.1-2011.6	ABS/ESP 项目 系统开发工程师
2011.7-2015.6	新型制动系统 系统开发工程师、项目功能安全经理
2015.7-2016.12	博世苏州底盘事业部功能安全能力中心 经理
2017.1- 至今	博世苏州底盘事业部信息安全能力中心和功能安全能力中心 高级经理

Yuanning QU
Senior Engineering Manager for Safety & Security CoC Chassis System Control
Bosch Automotive Co.(Suzhou)

01.2009-06.2011	System development engineer for ABS/ESP project
07.2011-06.2015	New braking system development engineer, Safety & Security Manager
07.2015-12.2016	Manager for Safety & Security CoC in Chassis System Control of Bosch China
From 01.2017	Senior Manager for Safety & Security CoC in Chassis System Control of Bosch China

陈 音
北汽股份汽车研究院
智能化部专业总师

陈音，现任北汽股份汽车研究院智能化部专业总师。之前曾就职于日产技术中心、长安汽车工程研究院。致力于汽车智能驾驶和电子电器系统的可靠性等领域的研发，在基于模型的开发验证技术、功能安全、V2X 技术、自动驾驶及测试技术方面都有深入研究和实践。

Yin CHEN
Chief Engineer of Intelligent Department
BAIC Automotive Research Institute

Chen is the Chief Engineer of Intelligent Department at BAIC Automotive Research Institute. She previously worked in Nissan Technology Center and Chang'an Automotive Engineering Research Institute. Focusing on the R&D of the reliability of intelligent driving, electronic system and other fields, she has conducted in-depth research and practiced in model-based development verification technology, functional safety, V2X technology, autonomous driving and testing technology.

王亚丽
百度
功能安全主管

王亚丽女士是一名功能安全主管，她在康明斯公司开始了她的职业生涯，担任嵌入式软件专家。她于 2017 年加入百度公司并担任系统集成主管。 她在 ISO26262，SoTIF 和其他与高度自动驾驶相关的安全领域拥有丰富的经验。她一直担任几个高度自动驾驶应用的功能安全专家。

Yali WANG
Head of Functional Safety
Baidu

The Functional Safety Expert. Yali Wang began her professional career in Cummins Inc, where she worked as an embedded software specialist. In 2017, she joined Baidu Inc. and hold the position as head of system integration. She had rich experience in the field of ISO26262, SoTIF and other safety domains related to highly automated driving. She has been working as functional safety specialist for several highly automated driving applications.

边 俊
上汽乘用车技术中心
系统安全部门经理、主任工程师

边俊，浙江大学硕士；2009 年开始从事功能安全研究，2012 年开始从事汽车电子功能安全相关工作，是国内首批 TUV 认证的功能安全专家；先后就职于海拉，TUV 莱茵，华为，并作为专家参与宝马 / 百度 / 泛亚等 ADAS 功能安全项目；目前在上汽乘用车技术中心任系统安全部门经理，主任工程师，负责智能驾驶 & 转向 & 制动功能安全 /SOTIF 相关工作。

Jun BIAN
Manager and Chief Engineer of System Safety Department
Technology Center of SAIC Passenger Vehicle Branch

Jun Bian obtained a master's degree from Zhejiang University. He has studied functional safety since 2009 and has been engaged in work related to functional safety of automotive electronics since 2012. He is one of the first TUV-certified functional safety experts. He has worked in Hella, TUV Rheinland, Huawei, and participated in ADAS functional safety projects of BMW/Baidu/Pan Asia as an expert. Now he is Manager and Chief Engineer of System Safety Department in the Technology Center of SAIC Passenger Vehicle, in charge of work related to intelligent driving & steering & braking functional safety/SOTIF.

陈 艳
HERE
方案架构师

陈艳供职于全球最大的导航电子地图及软件供应商 HERE Technologies。

大中华地区的汽车导航产品经理，是高精度地图、汽车导航产品、车联网服务及自动驾驶的资深产品专家。

Yan CHEN
Solution Architect
HERE

Chen, Automotive Product manager at HERE Technologies, Greater China. Senior product expert on Highly Autonomous Driving, Automotive IVI suite, Real time traffic, connected Vehicle service, ADAS map, special focus on HAD deployment in Greater China market.

朱倩影
英特尔中国研究院
高级研究员

朱倩影，英特尔中国研究院高级研究员，于 2008 年加入英特尔中国研究院，先后从事通信、存储方向 FPGA 的加速应用以及自动驾驶方向的前沿研究，目前主要负责自动驾驶的安全决策和标准化方面的工作。在加入英特尔之前，曾就职于华为技术有限公司，负责相关产品的硬件架构设计。

Qianying ZHU
Research Scientist
Intel China Research Center

Qianying Zhu, research scientist from Intel Labs China, is dedicated in studies on autonomous driving safety, as well as safety standardization in China. She has been at Intel from 2008, worked in FPGA acceleration technologies in many fields such as telecommunication, storage and so on. Before joined intel, she worked in Huawei Technologies Co. Ltd., for hardware architecture design.

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360公司

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car.360.cn

针对车联网的实际场景，360 结合安全大数据、云计算、人工智能等技术，打造了具备云端安全运营，安全通讯监测，安全可执行环境，安全芯片密钥存储的汽车联网防护—360 汽车防火墙，替代汽车原有通信模组，保障汽车联网安全。通过 360 安全大脑赋能，以 360 汽车防火墙为核心，连接 360 车载终端硬件，形成联网汽车驾驶的完整防护体系，解决出行安全问题。

360

Address 360 Building, Jiuxianqiao Road, Chaoyang District, Beijing, China

car.360.cn

In view of the actual scene of vehicle networking, 360 combines security big data, cloud computing, artificial intelligence and other technologies to create a safe cloud-side operation, secure communication monitoring, safe executable environment, safety chip key storage of automobile networking protection - 360 automobile firewall, replacing the original automobile communication module, to ensure the safety of automobile networking. Through 360 safety brain empowerment, 360 vehicle firewall as the core, connecting 360 vehicle terminal hardware, forming a complete protection system for networked vehicle driving, to solve the travel safety problem.

APSYS

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www.apsys-airbus.com

APSYS 致力于安全和网络安全工程及咨询。作为空中客车的全资子公司，APSYS 在过去 35 年中成功地保障了空中交通的安全，现在我们面对未来移动出行的新挑战，面向以下领域提供了大量服务：建立城市交通计划，从而保障在符合当地法规的前提下，自动驾驶车辆可以安全和可持续性地集成到大城市中；通过使自动驾驶汽车更加可靠、易于维护以及通过安全设计来防止网络攻击的方式，确保自动驾驶汽车的安全；保护通信设施并确认基于 IA 的全球控制系统；定义编队的结构特性和运输操作人员的 SLA 承诺；确保乘客有一个安全的乘坐体验。

APSYS

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APSYS specializes in controlling industrial risks. For 30 years APSYS has defined and implemented a process for controlling technical, human and operational risks on behalf of its customers. Designing reliable aircraft, securing complex systems, anticipating the obsolescence of a nuclear installation – these are the challenges faced by our customers and to which our 320 employees devote their know-how and advice.

With a turnover of 40.8 M€ in 2017, APSYS supports the aerospace, defence, industrial / energy and transport industries. APSYS is present in France in Toulouse-Blagnac, Paris-Élancourt, Marseille-Vitrolles, Great Britain and Germany, with representatives in Spain, China, Russia, Mexico and Morocco.

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B BlackBerry | QNX

黑莓

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BlackBerry 是一家值得信赖的安全软件和服务公司，致力于向企业和机构提供其所需技术和支持，以帮助他们提升物联网（IoT）的安全性。公司专注于安全性、网络安全和数据隐私，是人工智能、终端安全与管理、加密、嵌入式系统等领域的领导者。

BlackBerry

Address 831 IFC, No. 8 Century Avenue, Pudong New District, Shanghai, China

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BlackBerry is a trusted security software and services company that provides enterprises with the technology they need to secure the Internet of Things. The company is unwavering in its commitment to safety, cybersecurity and data privacy, and leads in key areas such as artificial intelligence, endpoint security and management, encryption and embedded systems.

D dSPACE 德 斯 拜 思

德斯拜思机电控制技术（上海）有限公司

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www.dspace.com

dSPACE 是世界领先的硬件和软件工具提供商，其提供的工具可用于开发和测试复杂电子控制系统。30 多年以来，dSPACE 的高品质现成软件和硬件工具使工程师可以随心所欲的进行设计和创新，并显著减少开发时间和成本。dSPACE 的 MicroAutoBox 快速原型系统、硬件在环 (HIL) 仿真器和自动生产代码生成器 TargetLink 等创新产品已成为在汽车领域开发电子产品的事实标准。

这些产品对航空航天、医药工程、工业自动化、电气驱动技术和其它行业也有重大影响。学术界使用 dSPACE 技术培养工程人才。 通过设在德国帕德博恩的总部及其项目中心、子公司和经销商构成的全球网络，dSPACE 的 1700 多名员工为世界各地的创新 提供支持。

dSPACE

Address 1101-1105, Harbour Ring Plaza, No. 18 Xizang Road (M), Huangpu District, Shanghai, China

www.dspace.com

dSPACE is the world's leading provider of hardware and software tools for developing and testing sophisticated electronic control systems. For over 30 years, dSPACE's high-quality, off-the-shelf software and hardware tools have empowered engineers to design and innovate, while dramatically reducing development time and cost. dSPACE's pioneering products such as the MicroAutoBox rapid prototyping systems, hardware-in-the-loop (HIL) simulators, and the automatic production code generator TargetLink have become de-facto standards for developing electronics in automotives.

They are also having a great impact in aerospace, medical engineering, industrial automation, electric drives technology and other industries. Academia uses dSPACE technology to nurture engineering talent. Through its headquarters in Paderborn Germany, as well as its global network of project centers, subsidiaries and distributors, dSPACE staff of around 1700 supports innovations all over the world.

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E ETAS

易特驰汽车技术(上海)有限公司

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www.etas.com

我们为汽车以及相关行业嵌入式系统开发提供创新解决方案。作为嵌入式系统开发可靠合作伙伴，我们提供嵌入式软件开发整个生命周期的解决方案包括开发验证工具和工程咨询服务。同时易特驰子公司 ESCRYPT 为您提供嵌入式系统领域的信息安全全方位和全生命周期的解决方案。

汽车行业正经历一场彻底的变革。创新日益增多，涵盖了新型节能驱动系统、半自动和全自主驾驶、数字化以及互联车辆技术等领域。这些新进展依赖电子和软件——这两个领域是易特驰所擅长的领域。我们提供开发安全相关软件所需的专业知识和合适的工具。

ETAS Automotive Technology (Shanghai) Co., Ltd.

Address No. 333 Fuquan Road North, IBP, Changning District, Shanghai, China

www.etas.com

We excel in providing innovative solutions that drive the development of embedded systems for the automotive industry and related sectors. As a systems provider, we offer a comprehensive portfolio of integrated tools and tool solutions as well as engineering services, consulting, training, and support. Holistic automotive security solutions are offered under the ESCRYPT brand.

The automotive industry is undergoing fundamental change. New, energy-efficient vehicle powertrains, (partially) autonomous driving, digitalization, connectivity, and cyber security – the list of innovations has never been so long. At the same time, new systems must be brought to market faster. Key technologies are electronics and software, which is exactly where ETAS' strengths lie. Our solutions are used at all stages of embedded software development. We have divided our products and services into five key segments to reflect our customers' application areas.

F FORUM 8

富朗巴软件科技（上海）有限公司

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www.forum8.co.jp/chinese/

FORUM8 公司创业以来以软件包开发技术为基础，以结构物设计为首，提供支援土木、建筑设计的软件、技术服务。近年来随着虚拟现实的开发，应用范围延伸到包括交通、汽车研发等更广泛的项目领域。

本公司的成长基础在于独创性通用软件的开发。UC-win/Road 作为一款实时虚拟现实软件开发于 2000 年，从初版发布以来，不断开发完善丰富的三维场景建模、驾驶模拟和演示等功能。

这些新产品、新技术的开发获得了外界的高度评价，先后获得日本经济产业省的委托研究、NEDO 的助成项目。以软件相关的技术服务、软件本身为核心的集成业务也以驾驶模拟器系统等为首不断成长，先后成功拿下中国交通部公路科学院的大型模拟器的国际投标，丰田公司、九州大学、京都大学的高端研究用驾驶模拟器等业务。

FORUM8 Technology Development (Shanghai) Co., Ltd.

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www.forum8.com

Since the company's foundation, FORUM8 have been providing software and technical services that support civil engineering and chitectural/structural design.Our recent developments in Virtual Reality software have lead to any new applications especially those in traffic and automobile research. In fact, FORUM8's VR technology is being utilized in those researches and indeed just about any type of project.

Since year 2000, we have been continuously enhancing our premier 3D VR software UC-win/Road and three dimensional analysis program UC-win/FRAME(3D).

Since the evaluation on the our development for these new products and new technologies is notably high from outside of the company, we even received an aid fund from Ministry of Economy for consigned development and NEDO.Moreover, technical service for our software and integration work with our software as a core such as driving simulator, are making further growth and improvements. Our recent success include being picked by the Chinese Traffic and Transport Department through international tender as the only successful candidate capable of delivering a large driving simulator that meets their criteria, and receiving an order of driving simulator designed for high level research from Kyushu University and Kyoto University not to mention the huge order of a very large driving simulator from the aforementioned department.

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是德科技IXIA事业部

地址 北京市朝阳区望京北路3号是德科技大厦

www.ixiacom.com/zh

是德科技（NYSE：KEYS）是一家领先的技术公司，致力于帮助企业、服务提供商和政府客户加速创新，创造一个安全互联的世界。从设计仿真、原型验证、生产测试到网络和云环境的优化，是德科技提供了全方位的测试与分析解决方案，帮助客户深入优化网络，进而将其电子产品以更低的成本、更快地推向市场。我们的客户遍及全球通信生态系统、航空航天与国防、汽车、能源、半导体和通用电子终端市场。2018 财年，是德科技收入达 39 亿美元。2017 年 4 月，是德科技完成对 Ixia 的收购。Ixia 公司在网络测试、可见性和安全解决方案领域具有十分雄厚的实力。

Ixia, A Keysight Business

Address Keysight Technologies Mansion, No. 3 Wangjing North Road, Chaoyang District, Beijing, China

www.ixiacom.com/zh

Keysight Technologies, Inc. (NYSE: KEYS) is a leading technology company that helps enterprises, service providers, and governments accelerate innovation to connect and secure the world. Keysight's solutions optimize networks and bring electronic products to market faster and at a lower cost with offerings from design simulation, to prototype validation, to manufacturing test, to optimization in networks and cloud environments. Customers span the worldwide communications ecosystem, aerospace and defense, automotive, energy, semiconductor and general electronics end markets. Keysight generated revenues of $3.2B in fiscal year 2017. In April 2017, Keysight acquired Ixia, a leader in network test, visibility, and security. More information is available at www.keysight.com.

MSC软件公司

地址 北京市朝阳区望京西路甲50号卷石天地大厦A座14层03-06单元

www.mscsoftware.com

MSC 软件公司是全球十大原创软件公司之一，也是通过仿真软件和服务帮助制造业改进其工程方法的全球领军者。作为值得信赖的合作伙伴，MSC 软件致力于帮助各类企业提高产品质量、节省时间、降低产品的设计成本。学术机构、研究人员及学生利用 MSC 的技术来拓展知识、扩大仿真视野。MSC 软件公司在全球 23 个国家拥有 1,400 多名员工。关于 MSC 软件公司产品和服务的更多信息，请访问： www.mscsoftware.com。

MSC 软件公司是 Hexagon（斯德哥尔摩证券交易所纳斯达克股票代码：HEXA B）旗下的公司。海克斯康是传感器、软件和自主方案的全球领导者，在全球 50 个国家拥有约 20,000 名员工。

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MSC Software

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MSC Software is one of the ten original software companies and a global leader in helping product manufacturers to advance their engineering methods with simulation software and services. As a trusted partner, MSC Software helps companies improve quality, save time, and reduce costs associated with design and test of manufactured products. Academic institutions, researchers, and students employ MSC's technology to expand individual knowledge as well as expand the horizon of simulation. MSC Software employs 1,400 professionals in 23 countries. For more information about MSC Software's products and services, please visit: www.mscsoftware.com

MSC Software is part of Hexagon, a global leader in sensor, software and autonomous solutions. Hexagon (Nasdaq Stockholm: HEXA B) has approximately 20,000 employees in 50 countries and net sales of approximately 3.8bn EUR.

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地址 深圳光明新区公明长圳长凤路379号生金工业园3F

www.sunet-sz.com

中聚泰连接器专为汽车产品设计，以 SMB 连接器装置为基础，同时生产 RF 同轴连接线／转接线、天线、USB 线等各类线束，完全符合 FAKRA 国家标准和欧美汽车工业标准。在深圳地区是 RF 同轴连接器领航生产商，已通过 ISO/TS16949 和 IATF16949 体系认证，并完全符合欧洲 RoHS 指标。目前我司已经开发高新 FAKRA SMB 系列，此类产品专门为各类汽车终端设备设计。

SUNNET (Shenzhen) Technology Co., Ltd.

Address 3F, Shengjin Industrial, No. 379 Changfeng Road, Changzhen Gongming Town Guangming New District, Shenzhen, China

www.sunet-sz.com

SUNNET connectors designed for automobile products, on the basis of SMB connectors device, at the same time production of RF coaxial cables/tieline, Antenna and other kinds of wiring harness, USB line, fully meet FAKRA national standard and the European and American automobile industry standards. In shenzhen area is RF coaxial connectors Leading manufacturer, has passed ISO/TS16949 and IATF16949 system certification, and fully comply with European RoHS indicators. At present our company has developed High-tech FAKRA SMB series, this kind of product specially designed for all kinds of vehicle terminal equipment.

SYSGO

地址 Am Pfaffenstein 14, D-55270 Klein-Winternheim, Germany

www.sysgo.com

SYSGO GmbH 是一家嵌入式操作系统供应商，成立于 1991 年，总部位于德国。专注嵌入式操作系统的开发。在 2006 年推出了具备高度安全性和可靠性的硬实时操作系统 Pike OS 产品，是一款可同时支持硬件和软件虚拟化技术的操作系统。该产品在设计之初就考虑了客户的安全性与可靠性的需求，可提供符合 DO-178B/C, IEC 61508, EN 50128, ISO 26262 等标准的开发环境。可支持目前主流硬件平台，尤其针对多核系统，可以通过对硬件 CPU 的优化更合理，更高效的利用。Pike OS 产品在欧洲最先被航空航天等军工企业应用，在近几年开拓了汽车市场，汽车客户有大陆，麦格纳等知名供应商。

SYSGO

Address Am Pfaffenstein 14, D-55270 Klein-Winternheim, Germany

www.sysgo.com

SYSGO GmbH is a leading Germany Software Company for Embedded Operating Systems, founded in 1991. SYSGO is experts in real-time based use-cases and provide PikeOS, the most advanced hard RTOS on the market since 2006. PikeOS is designed from scratch for mission-critical projects with certification requirements according to various safety and security standards (DO-178B/C, IEC 61508, EN 50128, ISO 26262, Common Criteria), which support different hardware architectures including multi-core processors and, by means of virtualization, make optimal use of the hardware resources. Applications benefit from better performance and stability. Pike OS was adopted first by Aerospace and military customers, now they have Continental and Magna as automotive customers.

以下企业信息由参展公司提供。

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威盛电子（中国）有限公司

地址 深圳市南山区深南大道9966号威盛科技大厦

www.viatech.com.cn

威盛集团成立于 1987 年，是全球高集成嵌入式平台及解决方案领导厂商致力于人工智能、计算机视觉、无人驾驶、医疗自动化等行业方案。公司总部位于台湾，并通过威盛全球化网络布局，在全球高科技核心区域设立了分支机构。客户群涵盖全球各大领先高科技、电信、电子消费品牌。

VIA Technologies (China) Co., Ltd.

Address No. 9966 VIA Technologies Building, Shennan Ave, Nanshan District, Shenzhen, China

www.viatech.com.cn

VIA Technologies, Inc is a global leader in the development of highly-integrated embedded platform and system solutions for AI, IoT, computer vision, autonomous vehicle, healthcare, and smart city applications. Headquartered in Taipei, Taiwan, VIA's global network links the high-tech centers of the US, Europe and Asia. Its customer base includes the many world's leading hi-tech, telecommunications, consumer electronics industry brand names.

上海望驰安防科技有限公司

地址 上海市浦东灵山路958弄5号楼2楼

www.ruitde.com

上海望驰成立于 2012 年，是一家持续快速发展的高新技术企业。望驰（上海）信息安全验证服务提供平台是上海望驰安防科技有限公司旗下的服务平台，专业从事汽车软件安全，金融数据安全，企业大数据中心、国防、军工、车联网、轨道交通等领域的电子产品软件安全验证服务。专业提供软件质量安全验证解决方案、咨询服务、研发工具代理以及安全测试专业培训等，办公地位于上海陆家嘴自贸区融汇创意园内，公司具有完善的科研、营销、服务体系。

本着"价值创新，服务客户"的理念，公司已经拥有汽车、金融、航空、航天、国防、轨道交通、船舶、教育等行业千余家国内外客户。

Shanghai Wang Chi Security Technology Co., Ltd.

Address 2F, No.5, Lane 958, Lingshan Road, Pudong New District, Shanghai, China

www.ruitde.com

Established in 2012, Shanghai Wang Chi Security Technology Co.Ltd is a fast-developing high-tech company. Wang Chi (Shanghai) security verification service platform belongs to Shanghai Wang Chi Security and Safety Technology Co., Ltd. The platform is dedicated to providing security verification service for electrical product software in fields including automotive software security, financial data security, corporate big data center, defense, military project, IoV, rail transportation. The company provides security verification solutions of software quality, consulting service, R&D tool agency and professional training on security testing. The office is situated in Ronghui Innovation Center in Lu Jiazui FTZ, Shanghai. The company is equipped with a complete system of scientific research, marketing and service.

Believing in "serving our customers with innovative values", the company has developed thousands of clients both at home and abroad, in industries such as automotive, finance, aviation, aerospace, national defense, rail transportation, ship, and education.

以下企业信息由参展公司提供。

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美国风河系统有限公司

地址 北京市朝阳区望京中环南路9号望京大厦B座18层

www.windriver.com.cn

风河是智能互联系统软件的全球领导者，近 40 年来，风河帮助一代代世界技术领军者不断适应安全设备的最严苛要求。在自治和互联的新时代，风河将继续引领潮流。风河软件广泛应用于各大现代化基础设施，确保其计算系统"无故障"运行，包括人物关键型 / 多用途飞机、火车、汽车、医疗设备、制造工厂和通信网络。

全球超过 20 亿台设备都使用风河技术，拥有世界一流的专业服务、荣膺殊荣的客户支持服务和广泛的合作伙伴生态系统。

Wind River

Address 18/B, No. 9 Wang Jing Tower, Wangjing Middle Ring South Road, Chaoyang District, Beiing, China

www.windriver.com.cn

Wind River is a global leader in delivering software for the Internet of Things (IoT). The company's technology has been powering the safest, most secure devices in the world since 1981 and today is found in more than 2 billion products. Wind River offers a comprehensive edge-to-cloud product portfolio that is backed by world-class global professional services, award-winning customer support, and a broad partner ecosystem. Wind River software and expertise are accelerating digital transformation of critical infrastructure systems that demand the highest levels of safety, security, performance, and reliability. To learn more, visit www.windriver.com.

上海熠速信息技术有限公司

地址 上海市闵行区中春路7755号宝虹中心701室

www.yisuworld.com

上海熠速信息技术有限公司（简称"上海熠速"）是一家持续和快速成长的高科技企业，通过与国际一流厂商的强强联合，以系统设计和开发为中心，为用户提供一流的研发工具、工程咨询以及培训等多种产品与服务。

主打产品 Speedgoat 实时仿真和测试系统，是 Mathworks 的官方合作伙伴。作为实时仿真系统领域的专家，可以无缝集成 Simulink 和 Simulink Real-Time 进行实时仿真和测试。

Speedgoat 专门针对 ADAS 应用推出了模块化设计 RCP（快速控制原型），可以根据用户需求灵活配置 IO 通道，性价比高，同时支持直流电源，可车载使用。

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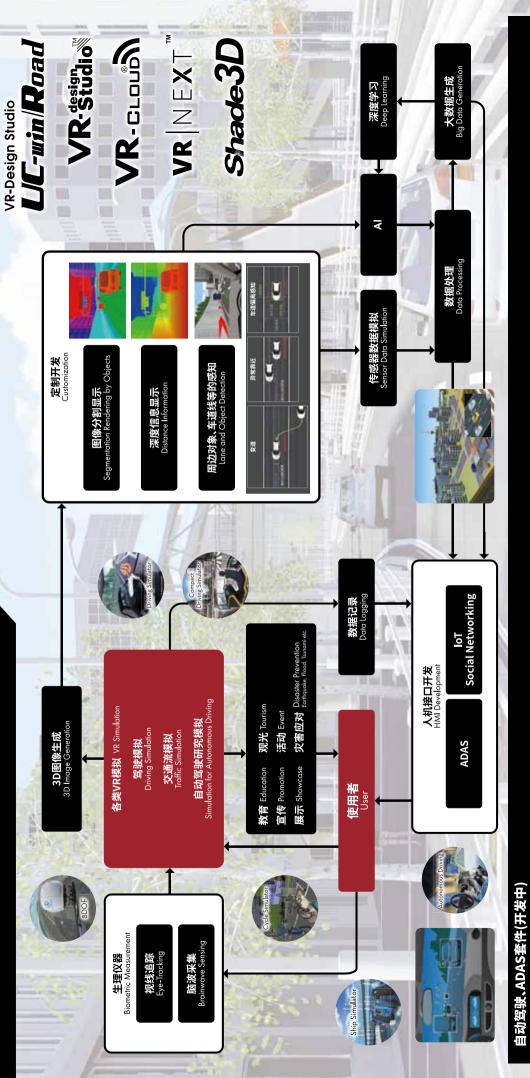## Shanghai YISU information technology Co., Ltd.

Address 701 BH Center, No. 7755 Zhongchun Road, MInhang District, Shanghai, China

www.yisuworld.com

Shanghai YISU information technology Co., Ltd. (Shanghai YISU) is a continuous and rapid growth of high-tech enterprises. Through strong alliance with world-class manufacturers, we focus on system design and development, and work hard in many industries to provide users with first-class R&D tools, engineering consulting and training.

Speedgoat Real-time Simulation and Testing System is the official partner of Mathworks. As an expert in real-time simulation system, Simulink and Simulink Real-Time can be seamlessly integrated for real-time simulation and testing. Speedgoat has developed a modular RCP (Rapid Control Prototype) for ADAS applications. It can flexibly configure IO channels according to user needs, with high cost performance, and supports DC power supply, which can be used in vehicles.

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