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February 13 - 14, 2018
MOScone South Convention Center | San Francisco, CA USA

Advanced Autonomous Drive Conference
Overcoming the Barriers to Engineering Safe Autonomous Vehicles

Keynotes

Autonomous Driving Cars - Trends, Challenges and Path Through Machine Learning
Anand Gopalan, Ph.D., Chief Technical Officer, Velodyne LiDAR

Panel Discussion: Integrating Transportation into the IoT - Smart Cities and the Logistics Ecosystem
Sai Yagnamurthy, Director, Global Strategy for Automotive Mobility Services, AI, Telematics, Autonomous Driving, Ford Motor Company

Coverage includes
- Advancements in LIDAR and RADAR Systems
- Autonomous Wireless Sensor Systems
- Adapting Current Safety Standards for Autonomous Vehicles
- Autonomous Software Architectures
- Smart Cities and the Logistics Ecosystem
- Connected Chassis
- Vehicle Telematics
- Integrating Transportation into the IoT
- Automotive Cyber Security
- Accident Liability

AdvancedAutoDrive.com
The implementation of autonomous technology is at the forefront of OEM vehicle development within applications such as passenger cars, commercial vehicles, and public transportation. Making the vision of mainstream autonomous driving a reality will require overcoming some significant technological, safety, and regulatory barriers. This summit will address the latest technological advancements in intelligent transportation; it will also explore how developers will overcome the various safety and regulatory hurdles on the path to implementation. Don’t miss this opportunity to hear from OEMs, commercial/academic R&D developers, insurers, as well as government regulatory agencies on how autonomous driving is positioned to significantly change the landscape of transportation as we know it today.

TUESDAY, FEBRUARY 13, 2018

AUTONOMOUS R&D APPLICATIONS

1:40 pm Chairperson's Opening Remarks
Sai Yagnyamurthy, Director Global Strategy for Automotive Mobility Services, AI, Telematics, Autonomous Driving, Ford Motor Company

1:45 OPENING KEYNOTE PRESENTATION: Autonomous Driving - Trends, Challenges and Path Through Machine Learning
Liang Heng, Ph.D., Cofounder & CTO, Roadstar.ai

Autonomous driving has gained enormous attention and momentum over the past years, due to its potentially huge benefit to our transportation systems. This talk will summarize the current trends and on-going efforts of autonomous cars. Then the talk will highlight the technical challenges and share some insights in how machine learning leads us to the path.

2:15 Artificial Intelligence in Autonomous Vehicles
Gaurav Agarwal, DriveWorks Product Management, Autonomous Vehicle, NVIDIA

Building a self-driving technology which can understand the nuances of the world and drive in all the scenarios is a hard problem. Driving in bad weather conditions e.g. snow when there is no lane markings, complex urban streets, construction zones etc are some examples. Artificial intelligence can help solve some of these issues. In this talk, the latest trends and challenges in Autonomous driving will be presented. Then the talk will discuss the role of Artificial intelligence/deep learning to enable this technology.

2:45 Self Driving Machines
Sam Kherat, Ph.D., Adjunct Professor, Mechanical Engineering Department, Bradley University

The adoption of robotics and automation technologies has been and will continue to be an evolutionary process. This past decade has seen a huge leap in autonomous vehicle technologies. On the other hand, the off-road implementation has been intricate. The mining and construction industries have been facing fewer skilled operators, increased scrutiny on hazardous or dangerous operations and environmental impacts like operator sound and vibration limits. In this presentation, Dr. Sam Kherat will overview the adoption of robotics, automation, and operator assist programs to improve safety in on-road as well as off-road applications.

3:15 Localization for the Next Generation of Autonomous Vehicles
Rob Hranac, Chief Operating Officer, Swift Navigation

The next generation of vehicles offering advanced driver assistance or fully autonomous operation will demand increasingly accurate position information, available in all driving conditions and with 100% availability. No single sensor can meet these requirements alone and therefore it is necessary to use a combined sensor suite solution incorporating several different kinds of sensors working together. As the only source of absolute position, velocity and time, GNSS play a critical role, however the next levels of autonomy (levels 3 - 5) require a GNSS system with lane-level positioning or centimeter-level accuracy (10 cm). Swift Navigation's discussion will provide a data-supported look at how RTK GNSS—augmented with local inertial measurements through accelerometers and gyroscopes—provides the accuracy required to gather useful information like vehicle heading, as well as increasing the frequency, smoothness and robustness of position information.

3:45 Refreshment Break with Exhibit and Poster Viewing

4:15 KEYNOTE PANEL DISCUSSION: Integrating Transportation into the IoT - Smart Cities and the Logistics Ecosystem
Moderator: Sai Yagnyamurthy, Director Global Strategy for Automotive Mobility Services, AI, Telematics, Autonomous Driving, Ford Motor Company

5:15 Close of Day One
ADVANCEMENTS IN LIDAR AND RADAR

8:00 am Morning Coffee

8:35 Chairperson's Opening Remarks
Sam Kherat, Ph.D., Adjunct Professor, Mechanical Engineering Department, Bradley University

8:40 KEYNOTE PRESENTATION: Smart 3-D LiDAR – Computing on the Autonomous Edge
Anand Gopalan, Ph.D., Chief Technology Officer, Velodyne LiDAR

Today, LiDAR sensors are becoming an essential element of the AV system, due to their rich data content, robustness to a variety of environmental conditions and coverage of the largest number of corner cases. The next few years will see the roll out of several AV fleets thereby proving out the case for a driverless car. A crucial bottleneck to mass commercialization will then be cost and power optimization of the autonomous driver system. One key enabler for this will be a smart LiDAR that not only generates a rich point cloud data set but also utilizes its first-hand knowledge of the dataset to carry out perception tasks at the sensor edge. As with other edge computing paradigms, this will result in a much more cost and power efficient compute system.

9:10 Photonic Technologies for LIDAR Sensors in Autonomous and ADAS Applications
Jake Li, Engineer, Hamamatsu Photonics

From fleets to commercial vehicles, there are a growing number of new and existing technologies that are important for the development of a fully autonomous vehicle. Aside from traditional sensors such as cameras, ultrasonic, and radar, LiDAR technologies are becoming the key enabler in the fusion of sensors needed to achieve higher levels of autonomous control (levels 4/5). Today, there are already multiple designs of LiDAR systems whose key components are photonic devices such as light sources, photodetectors, and MEMS mirrors. This presentation will provide an overview of the tradeoffs for LiDAR vs. competing sensor technologies (camera, radar, and ultrasonic) that re-enforce the need for sensor fusion, as well as summarize and compare various mechanical and solid state LiDAR designs. Guidelines for selecting photonic components such as photodetectors, light sources, and MEMS mirrors will also be discussed.

AUTONOMOUS INVESTMENT

9:40 Autonomous Vehicles – Infrastructure and Key Investment Trends
Fred Tanada, Co-Investor, Chestnut Street Ventures

Some key questions to be addressed in this presentation will be what infrastructure investments have been made to improve AVs? What are key trends in making investments with AVs? What's next?
12:10 pm Training to Become a Self-Driving Car Engineer  
David Silver, Self-Driving Car Team Lead, Udacity  
Learn how Udacity trains engineers to work on autonomous vehicles! Topics include deep learning, computer vision, sensor fusion, localization, control, path planning, and system integration. You’ll cover the technical challenges and trends of self-driving cars and the autonomous vehicle industry. Review examples of the projects that Udacity students build to learn and showcase their autonomous vehicle skills.

12:40 Luncheon Presentation (Sponsorship Opportunity Available)

AUTOMONOUS SAFETY & LIABILITY

2:05 Chairperson’s Opening Remarks  
Fred Tanada, Co-Investor, Chestnut Street Ventures  

2:10 Interior Cocoon as Prerequisite for a Safe, Autonomous Mobility  
Moritz von Grotthuss, Chief Executive Officer, Gestigon GmbH, a Valeo company  
Most discussions about autonomous mobility cover the navigation of the car. But how will the passengers be able to use the additional time in the car and how can today’s safety standards be transformed into the new epoch of mobility? Understanding passenger behavior, recognizing objects and creating an Interior Cocoon can be (part of) the solution.

2:40 Can These Vehicles Be Trusted, What Might the Future Look Like with Them on Our Roads and What Are the Implications for the UK Regulatory Environment?  
Lisa Collingwood, Ph.D., Senior Lecturer, Law, Kingston University, United Kingdom  
Testing and Regulatory Procedures will need to be amended to accommodate AVs on public roads. This proposal will evaluate the regulatory changes muted to date and evaluate the likely impact they will have in the UK.

3:10 Refreshment Break with Exhibit and Poster Viewing

3:40 Sue My Car Not Me: A Discussion of Civil Liability for Autonomous Vehicle Accidents  
Jeffrey Gurney, Attorney, Thomas, Fisher, Sinclair & Edwards, P.A.  
My presentation will discuss the alternatives for imposing liability for harm and damage caused by autonomous vehicles. My presentation will analyze accidents from a civil liability and an ethical standpoint; I will posit that traditional drivers should not bear the responsibility to compensate persons injured by autonomous vehicles. Instead, manufacturers of autonomous vehicles should bear primary liability for accidents caused by autonomous technology. My hope is for a general discussion on the topic and open participation by audience members.

4:10 PANEL DISCUSSION: Autonomous Vehicles – Maximizing Opportunities and Minimizing Risks  
Moderator: Chris Massot, Partner, Claro Partners  
Panelists:  
Uwe Higgen, Managing Director, BMW iVentures  
Sam Kherat, Ph.D., Adjunct Professor, Mechanical Engineering Department, Bradley University

5:10 Close of Conference

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For more information, contact:
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HOTEL & TRAVEL INFORMATION
Main Conference Venue:
The Moscone South Convention Center
747 Howard Street
San Francisco, CA 94103
www.moscone.com

Host Hotel:
Hilton San Francisco Union Square
333 O’Farrell Street
San Francisco, CA 94102
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Discounted Room Rate: $249 s/d
Discounted Cut-off Date: January 15, 2018
For reservations and additional travel information please visit the hotel and travel page of www.advancedautodrive.com