

*Where Industry and Academia Meet*

Join us

**EI25: COMPUTER VISION FOR AUTONOMOUS DRIVING****Instructor:** Rony Ferzli, Intel Corporation (US) | **Sunday January 28, 1:30 – 3:30 PM** | **Course Level:** Introductory to intermediate**Fee:** \$175 / Non-member: \$200 / Student: \$65 (\*prices for all increase by \$50 after January 8, 2018)

Computer vision algorithms are the backbone for any autonomous driving system. These algorithms play a key role in the perception and scene understanding enabling vehicles to operate not only under normal conditions, but also to adjust for unusual situations. The goal of the course is to present building blocks or ingredients needed for autonomous vehicles scenarios (such as lane departure warning, distance estimation, vehicle detection, traffic light detection, pedestrian detection, tracking, and sign detection) using classical approaches as well as latest research using deep learning. The short course also touches on design choices related to tradeoffs between complexity, performance, and accuracy. In addition, the course focuses on ADAS platforms, SDK tools, and how these can be used to develop and test computer vision algorithms.

**Benefits:**

- Understand the ADAS challenges.
- Understand ADAS scenarios.
- Describe the latest research in computer vision related to ADAS.
- Identify available platforms and tools to start development.
- Understand the complexity of each scenario and CV algorithm selection process based on a set of criteria (quality, performance, cost, power).

**Intended Audience:** Engineers, scientists, and students who need to acquire technical knowledge about computer vision algorithms used in Advanced Driver Assistance Systems (ADAS) and available tools used for development.

**Instructor:** **Rony Ferzli** received his BE and ME in electrical engineering from the American University of Beirut, Lebanon. He received his PhD in electrical engineering from Arizona State University, Tempe (2007). From 2007 to 2012, he worked in the R&D Unified Communications Group at Microsoft Corp., Redmond, WA, designing next generation video codecs for video conferencing products. Ferzli joined Intel Corporation in 2012 where he is currently a platform architect engineer at the Internet of Things Group (IoTG), researching and enabling computer vision and machine learning algorithms for Intel ADAS platforms. Prior to his current role, he worked on mobile devices SOC media technologies and next generation graphics as well as developing algorithms for HDTVs pre and post processing. He has more than 50 publications and patents in research areas such as image and video processing, DSP architectures and real-time systems, neural networks, and mixed-signal design. He holds several awards such as the Intel Division Award and IEEE SPS 2015 best paper award.

**SYMPOSIUM PLENARY TALKS**

**Monday:** Overview of Modern Machine Learning and Deep Neural Networks – Impact on Imaging and the Field of Computer Vision, **Greg Corrado, co-founder of Google Brain and Principal Scientist at Google**

**Tuesday:** Fast, Automated 3D Modeling of Buildings and Other GPS Denied Environments, **Avideh Zahkor, Qualcomm Chair & Professor at UC Berkeley**

**Wednesday:** Ubiquitous, Consumer AR Systems to Supplant Smartphones, **Ronald T. Azuma, Intel Labs Researcher and Augmented Reality Pioneer**

**SYMPOSIUM HIGHLIGHTS**

- 18 conferences featuring 30 keynote talks by world renowned experts
- 3D Theatre
- Tours of Stanford University Labs
- Industry Exhibition
- Meet the Future: Showcase of Student and Young Professional Research
- Demonstration Session
- Poster Session
- Welcome Reception
- Women in Electronic Imaging Breakfast
- Human Vision in Electronic Imaging 30<sup>th</sup> Year Banquet

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