Eshed Ohn-Bar

CONTACT INFORMATION

9500 Gilman Drive, MC 0436
Dept. of Electrical and Computer Engineering
University of California, San Diego
La Jolla, CA 92093 USA

Phone: (310) 598-8209
Email: eohnbar@ucsd.edu
Website: http://cvrr.ucsd.edu/eshed

EDUCATION

University of California, San Diego, La Jolla, CA USA — *Sep. 2011 – now*
Ph.D. Student in Electrical Engineering (GPA: 3.862)

- Advisor: Mohan M. Trivedi

University of California, Los Angeles, Los Angeles, CA USA — *Jun. 2011*
M.Ed. Teaching, Urban Schools, and Social Justice
B.S. Mathematics (*Summa Cum Laude,* GPA: 3.988)

RESEARCH EXPERIENCE

Computer Vision and Robotics Research Laboratory — *Dec. 2011 – now*
Graduate Student Researcher

- **Vision-based Driver Pose and Gesture Recognition**: Developed hand, head, and foot tracking algorithms from RGBD and motion data for maneuver analysis. Improved occlusion-handling tracking of hands in the vehicle using activity-exemplar tracklets.
- **What Will the Driver Do Next?** Researched multi-modal early event prediction with temporal Conditional Random Fields and Multiple Kernel Learning. Employed vehicle dynamics and sensor fusion of cameras, radar, and lidar.
- **On-Road Scene Understanding:** Developed object recognition modules for improved object detection and inference of object orientation and occlusion states. Studied the role of contextual cues and cost-sensitive classifiers for object detection and localization.
- **Challenge Organizer:** Organized the VIVA (Vision for Intelligent Vehicles and Applications) challenge – an online platform and evaluation server for sharing driving-related vision datasets (downloaded over 400 times).
- **System on Chip:** Collaborated on the design and implementation of on-road vehicle detection software for on-chip realization (C++).
- **Industry Collaboration and Testbeds:** Wrote funding research proposals, assisted in building and maintaining vehicular sensor suites, and worked in close collaboration with industry sponsors Toyota, Fujitsu, and NextChip.

Apple Research Internship, Cupertino, CA USA — *May-Aug. 2015*

University of California, Los Angeles, Los Angeles, CA USA — *Jun.-Sep. 2010*
Researcher at the Department of Applied Mathematics

- Advisor: Andrea Bertozzi and Todd Wittman

SELECTED PUBLICATIONS

E. Ohn-Bar, A. Tawari, S. Martin, and M. Trivedi. On Surveillance for Safety Critical Events: In-Vehicle Video Networks for Predictive Driver Assistance Systems. *Computer Vision and Image Understanding (**CVIU**)*, 2015. (pdf)

E. Ohn-Bar and M. M. Trivedi. Learning to Detect Vehicles by Clustering Appearance Patterns. *IEEE Transactions on Intelligent Transportation Systems (**T-ITS**)*, 2015. (pdf)

E. Ohn-Bar and M. M. Trivedi. Hand Gesture Recognition in Real-Time for Automotive Interfaces: A Multimodal Vision-based Approach and Evaluations. *IEEE Transactions on Intelligent Transportation Systems (**T-ITS**)*, 2014. (pdf)

E. Ohn-Bar, S. Martin, A. Tawari, and M. M. Trivedi. Head, Eye, and Hand Patterns for Driver Activity Recognition. *Intl. Conference on Pattern Recognition (**ICPR**)*, 2014. (pdf)

PROFFESIONAL ACTIVITY

Workshop Co-Organizer

- **CVPR 2015-16: Observing and Understanding Hands in Action Workshop**
- **IV 2015-16: Vision for Intelligent Vehicles and Applications Challenge/Workshop**

Reviewer

- T-SMC, T-ITS, IV, ITSC, T-VT, JEI

AWARDS

KITTI Challenge Winner for Vehicle Detection and Orientation Estimation 2014

Best Industry Paper Runner-Up, International Conf. on Pattern Recognition (ICPR) 2013

Best Paper Award, CVPR Workshop on Analysis and Modeling of Face and Gestures 2013

Wilson Teaching Scholar

Mary and Sarah Nemtzon Scholarship

UCLA University Grant

UCLA Scholarship Recognition Award

TEACHING EXPERIENCE

University of California, San Diego, La Jolla, CA USA — *Dec. 2011 – now*
Teaching Assistant

Probability Theory (ECE 109 - two quarters)

Computer Vision and Multimodal Perception (ECE 285 - yearly).

*Mathematics Instructor (*High-School Level) — *Sep. 2010-Jun 2011*

SKILLS

- Programming: C/C++, MATLAB, Python.
- APIs: Caffe, OpenCV, Boost, LabVIEW.