

Eshed Ohn-Bar

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EDUCATION

Ph.D., Electrical Engineering 2016

University of California San Diego
Department of Electrical and Computer Engineering - Signal & Image Processing
Advisor: Mohan M. Trivedi
Thesis: Contextual Visual Object Recognition and Behavior Modeling for Human-Robot Interactivity
GPA: 3.86/4.0

M.Ed. 2011

University of California Los Angeles
Department of Education
Thesis: Developing Critical Thinking through a Questioning Pedagogy
GPA: 4.0/4.0

B.S., Mathematics 2010

University of California Los Angeles
GPA: 3.99/4.0

ACADEMIC EMPLOYEMENT

Postdoctoral Researcher 2017-present

University of California San Diego
Advisor: Mohan M. Trivedi

AWARDS

Best Student Paper Award Finalist 2016

International Conference on Pattern Recognition, Cancun, Mexico

IAPR Travel Award 2016

International Conference on Pattern Recognition, Cancun, Mexico

NSF Travel Award 2016

International Conference on Computer Vision and Pattern Recognition, Las Vegas

NVIDIA Hardware Award 2015

First place, KITTI Vehicle Detection and Orientation Estimation Challenge 2014

Reconstruction Meets Recognition Workshop, ECCV, Zurich

Best Industry Related Paper Award Finalist International Conference on Pattern Recognition	2013
Best Paper Award Workshop on Analysis and Modeling of Face and Gestures, CVPR, Portland	2013
Wilson Teaching Scholar, UCLA	2009
Mary and Sarah Nemtzon Scholarship, UCLA	2009
UCLA Scholarship Recognition Award	2008

PROFESSIONAL ACTIVITY

Co-Organization of Workshops	
CVPR: Observing and Understanding Hands in Action	2015, 2016
IV: Vision for Intelligent Vehicles and Applications Workshop	2015, 2016
Program Committee	
CVPR: International Workshop on Automatic Traffic Surveillance	2016
Reviewer: CVIU, IMAVIS, T-SMC, T-CSVT, T-ITS, T-IV, JEI, T-IE, T-VT, T-II, CVPRW-ATS, CVPR-HANDS, IV, ITSC	

RESEARCH EXPERIENCE

Research Assistant, University of California San Diego	2012-2016
Research Internship Apple, Computer vision	2015
Researcher, UCLA Applied Mathematics Department Research for undergraduates program (with Andrea Bertozzi and Todd Wittman)	2010

STUDENT MENTORING

Aida Khosroshahi , Master Student	2016
Rakesh Rajaram , Master Student (now at Qualcomm Research)	2016
Akshay Rangesh , Master Student (now PhD at UCSD)	2016
Miklas Strøm Kristoffersen , Master Student (now PhD at Aalborg University)	2016
Jacob Dueholm , Master Student (now RA at Aalborg University)	2016
Grady Kestler , Master Student	2016
Nikhil Das , Master Student (now PhD at UCSD)	2015
Alfredo Ramirez , Master Student	2014
Aaron Spanner , Undergraduate Research	2013

TEACHING EXPERIENCE

Computer Vision and Multimodal Perception, UCSD	2013, 2014, 2015, 2016
TA for Mohan M. Trivedi [Graduate course]	
Engineering Probability and Statistics, UCSD	Winter 2012, Spring 2012
TA for Robert Lugannani and Ken Zeger [Undergraduate course]	
Mathematics and Engineering Instructor, Institute for the Gifted at UCLA	2011
Mathematics Instructor, Roosevelt High School, Los Angeles	2010-2011
Geometry, Math Intervention	
Hebrew Instructor, Sinai Temple, Los Angeles	2007-2009

PUBLICATIONS

Four **selected publications** are marked in **green**.

JOURNAL PAPERS

- * **E. Ohn-Bar** and M. Trivedi. Are all objects equal? Deep spatio-temporal importance prediction in driving videos. *Pattern Recognition (PR)*, 2017.

- R. Rajaram, **E. Ohn-Bar**, and M. Trivedi. Refining deep vehicle detectors for autonomous driving. *IEEE Trans. on Intelligent Vehicles (T-IV)*, 2017.

- * **E. Ohn-Bar** and M. Trivedi. Looking at humans in the age of self-driving and highly automated vehicles. *IEEE Trans. on Intelligent Vehicles (T-IV)*, 2016.

- E. Ohn-Bar** and M. Trivedi. Multi-scale volumes for deep object detection and localization. *Pattern Recognition (PR)*, 2016.

- A. Rangesh, **E. Ohn-Bar** and M. Trivedi. Long-term, multi-cue tracking of hands in vehicles. *IEEE Trans. on Intelligent Transportation Systems (T-ITS)*, 2016.

- * **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.

- E. Ohn-Bar** and M. Trivedi. Learning to detect vehicles by clustering appearance patterns. *IEEE Trans. on Intelligent Transportation Systems (T-ITS)*, 2015.

- * **E. Ohn-Bar** and M. Trivedi. Hand gesture recognition in real-time for automotive interfaces: a multimodal vision-based approach and evaluations. *IEEE Trans. on Intelligent Transportation Systems (T-ITS)*, 2014.

E. **Ohn-Bar**, S. Martin, and M. Trivedi. Driver hand activity analysis in naturalistic driving studies: Issues, algorithms and experimental students. *Journal of Electronic Imaging (JEI)*, 2013.

PAPERS IN REVIEWED PROCEEDINGS

E. **Ohn-Bar** and M. Trivedi. What makes an on-road object important? In *Proc. International Conference on Pattern Recognition (ICPR)*, 2016. **(best student paper award finalist)**

E. **Ohn-Bar** and M. Trivedi. To boost or not to boost? On the limits of boosted trees for object detection. In *Proc. International Conference on Pattern Recognition (ICPR)*, 2016. **(best student paper award finalist)**

E. **Ohn-Bar** and M. Trivedi. Detection and localization with multi-scale models. In *Proc. International Conference on Pattern Recognition (ICPR)*, 2016.

A. Rangesh, E. **Ohn-Bar**, K. Yuen, and M. Trivedi. Pedestrians and their phones - detecting phone-based activities of pedestrians for autonomous vehicles. In *Proc. IEEE Intelligent Transportation Systems Conference (ITSC)*, 2016.

A. Khosroshahi, E. **Ohn-Bar**, and M. Trivedi. Surround vehicles trajectory analysis with recurrent neural networks. In *Proc. IEEE Intelligent Transportation Systems Conference (ITSC)*, 2016.

R. Rajaram, E. **Ohn-Bar**, and M. Trivedi. RefineNet: Iterative refinement for accurate object localization. In *Proc. IEEE Intelligent Transportation Systems Conference (ITSC)*, 2016.

J. V. Dueholm, M. S. Kristoffersen, R. K. Satzoda, E. **Ohn-Bar**, T. B. Moeslund and M. Trivedi,. Multi-perspective vehicle detection and tracking: Challenges, dataset, and metrics. In *Proc. IEEE Intelligent Transportation Systems Conference (ITSC)*, 2016.

R. Rajaram, E. **Ohn-Bar**, and M. Trivedi. A study of vehicle detector generalization on US highway. In *Proc. IEEE Intelligent Transportation Systems Conference (ITSC)*, 2016.

S. Martin, A. Rangesh, E. **Ohn-Bar**, and M. Trivedi. The rhythms of head, eyes, and hands at intersections. In *Proc. IEEE Intelligent Vehicles Symposium (IV)*, 2016.

N. Das, E. **Ohn-Bar**, and M. Trivedi. On performance evaluation of driver hand detection algorithms: challenges, dataset, and metrics. In *Proc. IEEE Intelligent Transportation Systems Conference (ITSC)*, 2015.

R. Rajaram, **E. Ohn-Bar**, and M. Trivedi. An exploration of why and when pedestrian detection fails. In *Proc. IEEE Intelligent Transportation Systems Conference (ITSC)*, 2015.

E. Ohn-Bar and M. Trivedi. A comparative study of color and depth features for hand gesture recognition in naturalistic driving settings. In *Proc. IEEE Intelligent Vehicles Symposium (IV)*, 2015.

E. Ohn-Bar and M. Trivedi. Can appearance patterns improve pedestrian detection? In *Proc. IEEE Intelligent Vehicles Symposium (IV)*, 2015.

E. Ohn-Bar and M. Trivedi. Beyond just keeping hands on the wheel: towards visual interpretation of driver hand motion patterns. In *Proc. IEEE Intelligent Transportation Systems Conference (ITSC)*, 2014.

E. Ohn-Bar, S. Martin, A. Tawari, and M. Trivedi. Head, eye, and hand patterns for driver activity recognition. In *Proc. International Conference on Pattern Recognition (ICPR)*, 2014. (**best industry-related paper award finalist**)

E. Ohn-Bar, A. Tawari, S. Martin, and M. Trivedi. Vision on wheels: looking at driver, vehicle, and surround for on-road maneuver analysis. In *Proc. Conference on Computer Vision and Pattern Recognition Workshops (CVPR-Mobile Vision)*, 2014.

E. Ohn-Bar and M. Trivedi. Fast and robust object detection using visual subcategories. In *Proc. Conference on Computer Vision and Pattern Recognition Workshops (CVPR-Mobile Vision)*, 2014.

A. Ramirez, **E. Ohn-Bar**, and M. Trivedi. Go with the flow: improving multi-view vehicle detection with motion cues. In *Proc. International Conference on Pattern Recognition (ICPR)*, 2014.

E. Ohn-Bar and M. Trivedi. Joint angles similarities and HOG² for action recognition. In *Proc. Conference on Computer Vision and Pattern Recognition Workshops (CVPR-Human Activity Understanding from 3D Data)*, 2013.

E. Ohn-Bar and M. Trivedi. The power is in your hands: 3D analysis of hand gestures in naturalistic video. In *Proc. Conference on Computer Vision and Pattern Recognition Workshops (CVPR-Analysis and Modeling of Faces and Gestures)*, 2013. (**best paper award**)

E. Ohn-Bar, S. Sivaraman, and M. Trivedi. Partially occluded vehicle recognition and tracking in 3D. In *Proc. IEEE Intelligent Vehicles Symposium (IV)*, 2013.

E. Ohn-Bar and M. Trivedi. In-vehicle hand activity recognition using integration of regions. In *Proc. IEEE Intelligent Vehicles Symposium (IV)*, 2013.

E. Ohn-Bar and M. Trivedi. Hand gesture-based visual user interface for infotainment. In *Proc. Automotive User Interfaces and Interactive Vehicular Applications (AUTO-UI)*, 2012.

REFERENCES

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University of California San Diego, CA, USA
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Serge Belongie

Professor, Department of Computer Science
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Kyndall Brown

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