Thomas Weng

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Research Interests

I am interested in Human-Robot Interaction and Robot Task Learning. My objective is to develop computational models of robots that augment task learning using social feedback.

Education

2011 - 2015 | **B.S. Computer Science & B.A. Economics**, Yale University
GPA: 3.77 *with distinction in the C.S. major*

SENIOR PROJECT: Real-time robot perception of human nonverbal behavior
ADVISORS: Brian Scassellati, Henny Admoni
Designed and implemented a perception system for robots to detect human gazing and pointing gestures. Evaluated the system on an object disambiguation task using social cues.

Research Experience

Current
JUL 2017 | **Research Staff**
Human-Centered Robotics Lab, University of Washington
PI: Maya Cakmak
Developing situated interfaces using robot-mounted projectors for human-robot communication. Constructing an optimization model for the placement of projected object annotations while accounting for occlusions, projectable space, and user perspective.

2014 - 2015 | **Research Assistant**
Social Robotics Lab, Yale University
PI: Brian Scassellati
Worked with Henny Admoni on robot generation of social nonverbal behavior and the effect of such behaviors on task performance in human-robot collaborations.

Publications

2016 Admoni, H., **Weng, T.**, and Scassellati, B. Modeling communicative behaviors for object references in human-robot interaction. In *IEEE International Conference on Robotics and Automation (ICRA)*, pages 3352-3359. Acceptance rate: 35%

2016 Admoni, H., **Weng, T.**, Hayes, B. and Scassellati, B. Robot nonverbal behavior improves task performance in difficult collaborations. In *ACM/IEEE International Conference on Human Robot Interaction (HRI)*, pages 51-58. Acceptance rate: 25%

Awards and Honors

2015 **Computer Science Research Prize**, Yale University
Awarded to the graduating senior who, in the judgment of the Computer Science faculty, ranks highest in research.

2014 **Trumbull College Scholarship for Economics**, Yale University

Outreach

2017 **Robotics Review Newsletter**
Writing a weekly newsletter for the public covering robotics-related research and news. Over 100 weekly readers and growing.

2017 **Code Haven at Yale guest speaker**, New Haven, CT
Spoke with students at under-served New Haven public schools about STEM careers.

2015 **Trumbull College Mellon Forum**, Yale University
Presented thesis at a selective opportunity for seniors to share their work with peers.

2015 **Yale Social Robotics Lab open house**, Yale University
Demonstrated social perception system at semi-annual open house for the public, drawing approx. 100 adults and children from the greater New Haven community.

Industry Experience

Sep 2015 - Jul 2017 | **Software Engineer 2**
Bing Answers, Microsoft Corporation, Bellevue, WA
Developed a Q&A card on the Bing search results page to display workplace-related results for an enterprise search product. Created nine interactive Bing answers relating to the 2016 U.S. elections, generating 100 million impressions over the course of the campaign.

Summer 2014 | **Software Engineer Intern**
Bing Answers, Microsoft Corporation, Bellevue, WA
Built WordPress plugins for Bing widgets, enabling third party WordPress sites to add contextual images and other rich content from Bing to their web pages.

Summer 2013 | **Program Manager Intern**
Bing Ads, Microsoft Corporation, Bellevue, WA
Shipped a service health page for the Bing Ads API service, managing the project end-to-end.

Summer 2012 | **Credit Risk Management Intern**
Credit Risk Office, JPMorgan Chase & Co., New York, New York
Wrote VBA scripts to automate workflows on setting trading restrictions, reducing the firm's exposure to operational risk. Reviewed proposals for new JPMorgan ventures.

Technical Skills and Training

Software: C/C++, Python, C#.NET, Java, JavaScript, R, Octave/MATLAB, SQL
Relevant frameworks: ROS, OpenCV, MoveIt!, Tensorflow, React

Hardware: PR2, Aldebaran Nao, Rethink Robotics Baxter, 6DOF Kuka KR210, Kinect, Raspberry Pi, Arduino

Courses:

Robotics	Neural Networks	Machine Learning
Udacity Nanodegree	Coursera	Coursera
Term 1 completed Nov 2017	Completed Feb 2017	Completed 2014
C++, Python, ROS	Octave/MATLAB	Octave/MATLAB