Thomas Weng

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EDUCATION

2018 - PRESENT	**Ph.D. Robotics**, Carnegie Mellon University ADVISOR: TBD
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 Created a perception system using the Kinect 2 to detect human gazing and pointing gestures towards objects. Connected the Windows-based Kinect 2 and Linux-based Nao robot via websocket connection to transfer RGBD and skeleton data (no Linux drivers were available for the Kinect 2 at the time). Evaluated the system on object disambiguation tasks.

RESEARCH EXPERIENCE

2017 - 2018	**Research Scientist** Human-Centered Robotics Lab, University of Washington PI: Maya Cakmak Developed a situated interface for human-robot communication using a robot-mounted projector. Designing an optimization model that places projected object labels on a surface, maximizing the likelihood of referencing selected objects while minimizing the likelihood of referencing distractor objects. Extended the interface for use as a feedback mechanism in the context of situated tangible programming.
2014 - 2015	**Research Assistant** Social Robotics Lab, Yale University PI: Brian Scassellati Worked on robot generation of social nonverbal behavior (NVB) with Henny Admoni. Implemented gesture generation system based on NVB model using a Kinect 2 and Nao robot. Used system in user studies validating NVB model on human-robot collaborations.

PUBLICATIONS

2018	**Weng, T.***, Sefidgar, Y.*, and Cakmak, M. RobotIST: interactive situated tangible robot programming. In *ACM Symposium on Spatial User Interaction (SUI)*, forthcoming.
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

2018   **Graduate Research Fellowship Honorable Mention**, NSF

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   **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 and Other Experience

Apr 2018 - Jun 2018   **Programming Retreat Participant**
Recurse Center, New York, New York

Recurse Center hosts self-directed, community-driven retreats for programmers. Worked on projects such as implementing RL algorithms to solve OpenAI Gym environments, building a web app to recommend robotics publications to users using latent semantic analysis, and developing intelligent behaviors such as navigation and ball-following on a mobile robot built from scratch.

Sep 2015 - Jul 2017   **Software Engineer 2**
Bing Answers, Microsoft Corporation, Bellevue, WA

Created nine interactive Bing answers relating to the 2016 U.S. elections, generating over 100 million impressions over the course of the campaign. Developed a Q&A card on the Bing search results page to display workplace-related results for an enterprise search product.

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, coordinating the project end-to-end.

Technical Skills and Training

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

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

Courses	Motion Planning	Robotics Nanodegree	Neural Networks
	UW CSE 599	Udacity	Coursera
	Taken Fall Qrtr '17	Finished Term 1 of 2, Sep '17	Completed Feb '17
	Python, OpenRAVE	Python, ROS, TF	Octave/MATLAB