Bo Wu

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**EDUCATION**

**UNIVERSITY OF notre dame** Notre Dame, IN

Ph.D. in Electrical Engineering (GPA: 3.8/4) December 2016 (expected)

Two time recipient, Notebaert Professional Development Award

Thesis: (Working Title) *Formal Methods in Control of Probabilistic Systems*

Advisor: [Prof. Hai Lin](http://www3.nd.edu/~hlin1/),

**Lund University** Lund, Sweden

Master of Science in Electrical Engineering (GPA: 4/4) May 2011

**Xi’an JIAOTONG UNIVERSITY** Xi’an, China

Master Student in Electrical Engineering May 2009

**Harbin Institute of Technology** Harbin, China

Bachelor of Science in Electrical Engineering (GPA: 89.7/100) July 2008

Recipient, National Scholarship

**Professional EXPERIENCE**

**University of Notre dame,**  Notre Dame, IN

**Research Assistant,** [**DISCOVER Lab**](https://sites.google.com/a/nd.edu/discoverlab/) August 2011 – present

* Designed machine learning based framework for probabilistic systems control, with potential application in motion planning and human robot interaction, resulting in 3 publications at IEEE top conferences
* Proposed a unified approach to multi-agent systems, combining top-down task allocation and bottom-up local motion planning such that connectivity and coordination can be guaranteed, research resulted in publication at the 2015 IFAC Conference on Analysis and Design of Hybrid Systems
* Analyzed the stability of networked control systems with practical communication protocol and proposed communication-control co-design, resulting in 2 top conference presentations and 1 journal (under review)
* Developed Baxter humanoid robot, utilizing Robot Operating System and Python to establish vision based robot sensing and manipulation
* Designed Unmanned Aerial Vehicle (UAV) interface structure, modifying the UAV firmware and programming the onboard computer to achieve autonomous indoor flight

**Lund University** Lund, Sweden

**Master Project, Department of Electrical and Information Technology**  August 2009-May 2011

* Analyzed real data with MATLAB collected by Ericsson AB, studying how multi-sector cooperation improves channel capacity in cellular networks. Project resulted in publication in peer viewed journal

**Leadership & Service**

**Professional Affiliations:** IEEE, IEEE Control Society

**Leadership Activities:** American Control Conference, 2015, Session Chair; DISCOVER Lab, National Robotics Week, 2014 and 2015, Team Lead; Peer Reviewer for top conferences and journals

**technical skills**

**Computer Skills:** Proficient in C/C++, Python. MATLAB, Linux, Robot Operating System.

**Languages:** Fluent in Mandarin

**Publications**

**Wu. B**. and Lin, H. “Counterexample-guided Distributed Permissive Supervisor Synthesis for Probabilistic Multi-agent Systems through Learning,” in *American Control Conference (ACC)*, 2016, to appear

**Wu, B.** and Lin, H. “Formal Methods for Stability Analysis of Networked Control Systems with IEEE 802.15.4 Protocol.” *IEEE Transactions on Control Systems Technology*, submitted, 2015

Zhang, X., **Wu, B.** and Lin, H. “Learning Based Supervisor Synthesis of POMDP for PCTL Specifications." *Decision and Control (CDC), 2015 IEEE 54th Annual Conference on*, 7470-7475, 2015.

**Wu. B.**, Dai, J., and Lin, H. “Combined Top-down and Bottom-up Approach to Cooperative Distributed Multi-agent Control with Connectivity Constraints" *the 5th IFAC Conference on Analysis and Design of Hybrid Systems (ADHS)*, 224-229, 2015.

**Wu. B.** and Lin, H. “Counterexample-guided Permissive Supervisor Synthesis for Probabilistic Systems through Learning," *in American Control Conference (ACC),* 2894-2899, 2015

**Wu, B.**, Lin, H. and Lemmon, M. “Formal Methods for Stability Analysis of Networked Control Systems with IEEE 802.15.4 Protocol." *Decision and Control (CDC), 2014 IEEE 53rd Annual Conference on*, 5266-5271, 2014.

**Wu, B.**, Lin, H. and Lemmon, M. “Stability Analysis for Wireless Networked Control System in Unslotted IEEE 802.15.4 Protocol." *Control Automation (ICCA), 11th IEEE International Conference on*, 1084-1089, 2014.

Tian, R., **Wu, B.**, Lau, B., Medbo, J. “On MIMO Performance Enhancement with Multisector Cooperation in a Measured Urban Environment." *IEEE Antennas and Wireless Propagation Letters*, Vol 11, 2012.