# Yaliang Wang

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## Education

- M.S. Computer Science, Northwestern University. 3.78/4.00. *2014 - present*
- B.E. Automation(Control), Zhejiang University. 3.67/4.00. *2009 - 2013*

## Skills

- Python, C++, Javascript, MATLAB, PHP, Linux, Latex, Academic Writing.

## Experience

**Technical Assistant**, Kellogg School of Management, Northwestern University. *November, 2015 - present*

- Responsibility to build software with flexible configuration for Evaluative Movement Assessment(EMA) experiments on PsychoPy.
- Responsibility to design and implement structured database, RESTful data service API and front-end of a web platform for building and managing online EMA experiments.

## Projects

**Researcher, Master Thesis**, Detection, Tracking and Classification of Particles and Bubbles in IV Bags. *December, 2014 - present*

- Labeling: build a crowd-sourcing mobile application to label the patches from captured image. Github
- Detection: learn the model from labeled data to detect particles in frame.
- Tracking: match the particles between adjacent frames based on cost function to build tracks.
- Classification: classify the tracks in the IV Bags into Particles or Bubbles.

**Group Member**, Course Projects in Data Science for International Trade of U.S. Prediction. *September, 2015 - December, 2015*

- Use SQL and Hadoop to do the simple analysis on statistical question and visualize data with Tableau.
- Hypothesis testing on relationship of international trade and features with Excel.
- Learn the predict model with linear regression, radial basis function network and neural network. The best fit achieved less then 7% error rate.

**Algorithm Designer & Coder**, Recommendation System for Streaming Music Service. Github, Project Page, Live Demo. *April, 2015 - June, 2015*

- Developed a K-nearest-neighbor based collaborative filtering system to recommend new artists. The recommender predicts the most favorite artist beyond the listened artists for a test user based on the listen history of users and tag information of artists. Final accuracy reached over 30 %.
- Deployed an on-line dashboard to build mock user and interactive with recommender application hosted on Heroku.com. Python is used for this project.

**Algorithm Implementor**, Handwritten Digit Recognition. Github, Video(3 mins). *December, 2014 - March, 2015*

- Developed and implemented 2-Layer Neural Network with 1000 hidden neurons. Final achieved accuracy: 96.73 % on the MNIST Dataset.

**Group Member**, Course Projects in Networking. *December, 2014 - March, 2015*

- Implement HTTP client and server applications and TCP module based on the Minet TCP/IP stack, a user-level stack designed for networking course in Northwestern University.
- Implement distance-vector algorithm in the context of a simple routing simulator. All works are finished in C++.

**Tech Team Member & Main contributor**, Shh...note, an anonymous text app. Github, Live Demo. *Octerber, 2014 - December, 2014*

- Worked as tech team to develop and deploy a product for the client team who are from Master Program of Product Design and Development. Agile development methodology is practiced.
- The front-end is based on HTML5, CSS3, jQuery & jQuery Mobile and the back-end is based on PHP(using Silex), PostgreSQL & Google Voice Text API hosted by Heroku.com.

**Researcher, Bachelor Thesis**, Balance Maintenance for Humanoid Robots Subjected to External Disturbance. Publications, Demo. *December, 2012 - June, 2014*

- First author of the paper published at ICRA 2014, top 1 international conference in robotics.

## Awards

- Best Student Application Paper Award, IFAC ICONS 2013, *2013*.
- Zhejiang University 2013 Session Excellent Bachelor Thesis Award, Zhejiang University, *2013*.

## Publications

- **Yaliang Wang**, Rong Xiong, Qiuguo Zhu, and Jian Chu, "Compliance Control for Standing Maintenance of Humanoid Robots under Unknown External Disturbances", *2014 IEEE International Conference on Robotics and Automation*, pp. 2297-2304 Hong Kong, China, May 31 - June 5, 2014.
- **Yaliang Wang**, Qiuguo Zhu, Rong Xiong, and Jian Chu, "Standing Balance Control for Position Control-Based Humanoid Robot", *3rd IFAC International Conference on Intelligent Control and Automation Science (IFAC ICONS 2013)*, pp.429-436, Chengdu, China, September 2-4, 2013.
- Chao Li, Rong Xiong, Qiuguo Zhu, Jun Wu, **Yaliang Wang**, Yiming Huang, "Push recovery for the standing under-actuated bipedal robot using the hip strategy", *Journal of Zhejiang University-SCIENCE*, 2014.

## Exchange Experience

- Vancouver Summer Business Program, SAUDER School of Business, The University of British Columbia, *July, 2012 - August, 2012*.