

CHUAN-HENG (HENRY) LIN

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RESEARCH INTERESTS

Research focuses on developing interactive technology for hyperconnected society such as sustainable infrastructure system, intelligent transport system, and ubiquitous computing which involves in the series of machine learning pipeline - collecting data from physical world, analyze data to gain insight from complex system, and clear visualization to build up smart cities.

EDUCATION

National Taiwan University

Sep. 2013 - June. 2015

M.S. in Civil Engineering (Transportation Division)

Thesis: "Metro Rapid Transit system Demand Prediction through Social Media."

Advisor: Albert Y. Chen

National Taiwan University

Sep. 2008 - Jul. 2013

B.S. in Civil Engineering

Thesis: "Dynamic Evacuation Guidance System."

Advisor: Albert Y. Chen

AWARDS

Academic Financial Support Award

June. 2014 & June. 2015

Ministry of Science and Technology, Taiwan(ROC)

Acknowledged by the Ministry of Science and Technology and received government subsidy to present at ICCBE conference in Orlando, Florida(2014) and IWCCE conference in Austin, Texas(2015).

PUBLICATIONS

- **Lin, C.-H.*** and Chen, A.Y. (2015) "Trip Characteristics Study through Social Media Data", International Workshop on Computing in Civil Engineering(IWCCE 2015), Texas, USA, June 22 - June 25.
- Chen, A.Y. and **Lin, C.-H.***. (2014) "Distributed Decision Making for Real-time in-Building Evacuation Guidance."The International Conference on Computing in Civil and Building Engineering (ICCBE XLVIII) and International Council for Research and Innovation in Building and Construction(CIB) W078 conference, Orlando, USA, June 23 - June 25.
- Chen, A.Y. and **Lin, C.-H.***. (2014) "A Dynamic Distributed In-building Evacuation Guidance System", The International Symposium on Reliability Engineering and Risk Management (ISRERM 2014), Taipei, Taiwan, May 20 - May 24.

WORK EXPERIENCE

Civilian Military Service

Aug. 2015 - present

Bureau of Foreign Trade, Ministry of Economics

Responsible for supervising the construction schedule of Taipei Nangang Exhibition Center, Hall 2.

- Research Assistant** *Sep. 2013 - June. 2015*
National Taiwan University
 Conducted in cross-disciplinary research, published three conference papers and presented in international conference.
- Data Engineer** *Jan. 2015 - July. 2015*
Xinosys System Inc. (Patisco.com)
 developed tools in text mining, web crawler and database manipulation.
- Operation intern** *Nov. 2014 - Jan. 2015*
Uber (Taiwan)
 Managed driver database and improved the driver registration progress.
- Teaching Assistant** *Sep. 2012 - July. 2015*
National Taiwan University
 Course: Automation and Robotics, Civil Engineering Cornerstone Challenge, Flight Management, Civil Engineering and Disaster Management, Calculus
- Research Assistant** *Sep. 2012 - Feb. 2013*
National Science and Technology Center of Disaster Reduction
 Established a GIS database and automated the procedure of transferring Google Earth files to this database.

TECHNICAL PROJECTS

- Automatic Speech Recognition(ASR) system** *March. 2015 - July. 2015*
Course: Machine Learning and Having It Deep and Structured
 Built an Automatic Speech Recognition(ASR) system with Nbest Viterbi Algorithm, and Recurrent Neural Network Language Modeling.
- Predicting Posts Propagation in Ptt boards** *March. 2015 - July. 2015*
Course: Web Retrieval and Mining
 Built up a web crawler to collect data on Ptt, extracted essential features with topic modeling approaches (LSA/NMF/LDA), and predicted posts propagation with Regression learning model.
- Link Prediction and POI recommendation on Gowalla** *Sep. 2014 - Jan. 2015*
Course: Social Network Analysis and Graph Mining
 Implemented Non-negative Matrix Factorization on POI recommendation and Extracted the feature from both social feature and spatial feature. Link prediction also applied linearSVM to predict the social relationship.
- Bike Sharing Demand Prediction** *March. 2014 - July. 2014*
Course: Data Mining
 Acquired data from the Kaggle Competition and applied time series analysis and basic machine learning models such as Support Vector Machine, RandomForest, Generalized Boosted Regression Models, etc. to predict the bike usage demand; this program was written in R.
- Chinese Hand-Writing Recognition System** *Sep. 2013 - July. 2014*
Course : Machine Learning
 Combined image pre-processing and machine learning techniques such as Support Vector Machine and Random Forest to identify twelve different Chinese characters; applied down sampling and cropping to filter the data.
- 3D Simultaneous Localization and Mapping** *Sep. 2013 - Jan. 2014*

Course : Robot Perception and Learning

Implemented computer vision technique to find SIFT features from images captured from a robot equipped with RGBD cameras; used odometry and kalman filter to minimize error measurements; this program was written in C++ with OpenCV library and PCL library.

2012 OpenHCI Workshop

Sep. 2013 - Jan. 2014

Product: STREET VOICE

Designed a project named "Street Voice" to capture live music performances in a park in Taipei; reflected mainstream life style through the use of music and lighting that evokes memories of the neighborhood. This project was reported by the local media. ([Cool3c](#)/ [BIOS Monthly](#)).

ACTIVITIES

The YiKon Children's Home

Sep. 2015 - present

Volunteer

Taught children homework and read bible with them every monday.

National Taiwan University Basketball Cup - Silver medal

2014 & 2015

Silver medal

Led the department basketball team and won the silver medal for the first time at the school-wide Championship final game.

National University Basketball Association II

2012

Quarter Final

Participated in the starting lineup and averaged 12 points and 10 rebounds per game in a series of all-school tournament.

Google search competition for the Valentines Day

2011

First Price

Created a short film showcasing Google search functions for planning activities on Valentines Day; won the first place out of hundreds of applicants in this film competition hosted by Google.

SKILLS

System: Linux, Unix, Microsoft

Programming: Python, Javascript, C/C++, R, Shell Scripts

Geographical/Mathematical Tools: QGIS, ArcGIS, MATLAB

Database: SQL, MongoDB, Neo4j

Hardware: Arduino, Raspberry Pi

Office Tools: Microsoft Office, L^AT_EX

Design software: Sketchup, Omax, Photoshop, Illustrator, Blender.