# Ming-Chang Chiu

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**INTERESTS**

My interests are in computer cognition, robotics, machine learning and high-performance computing. I am particularly interested in understanding the latent

**EDUCATION**

**University of Southern California (USC)**, Los Angeles, California, USA
Master (M.S.) in Electrical Engineering — Aug 2016 – May 2018 (Expected)
- Areas of Specialty: Data Science, Digital Signal Processing

**National Tsing Hua University (NTHU)**, Hsinchu, Taiwan
Bachelor of Science (B.S.) in Electrical Engineering and Computer Science — Sep 2011 – Jun 2015
- Last 60 GPA: 4.05 / 4.30, Cumulative GPA: 3.82 / 4.30 (Excluding credits at University of Minnesota)

**University of Minnesota**, Twin-Cities, Minnesota, USA
Exchange Student in Computer Science and Engineering — Sep 2014 – Dec 2014
- Introduction to Intelligent Robotics (A), Advanced Programming Principles (A)
- Cumulative GPA: 4.0 / 4.0, 15 credits

**Tsinghua University**, Beijing, China
Summer Exchange Student in Computer Science — Aug 2012 – Sep 2012

**RESEARCH PROJECTS**

**The World is Changing: Finding Changes on the Street** — Feb 2015 – Sep 2015
Under supervision of Prof. Min Sun, Visual Science Laboratory, NTHU
- Constructed image change detection system, successfully detected street view mismatches in Dash camera images with respect to Google Street View (GFV)
- Applied RANSAC to re-outline the areas of mismatches in the original GFV images with accuracy outperformed baseline by 46%
- Devised a reusable manual labeling software and data types that recorded ground truth mismatch areas

**Re-scheduling Large-Scale System Task** — Jul 2013 – Aug 2014
Under supervision of Prof. Jerry Chou, Large-Scale System Architecture Laboratory, NTHU
- Applied Hadoop benchmark (HiBench) to test performance of processing different types of computing job on scalable distributed system
- Analyzed and found suitable disk for certain computing job type
- Applied machine learning algorithm on Linux resource usage to discern types of computing and then movie the data to appropriate disk to proceed, either on Hard Disk or Solid-State Disk

**APPLICATION PROJECTS**

**Movie Recommender** — Mar 2015 – Jun 2015
- Implemented 3 common recommendation methods and utilized MovieLens database to recommend movies
- System built on Amazon AWS platform which enables to process millions of data in a short time

**Basic Dictionary Search Engine** — Feb 2015 – Apr 2015
- Implemented PageRank algorithm to construct a search engine which prioritize the related links given a keyword
- Coded under scalable MapReduce framework on 8-node distributed computers with storage/retrieval functions

**Autonomous Robotic Convoy System Design** — Oct 2014 – Dec 2014
- Designed an algorithm that enables rovers to follow only one moving object without getting distracted
- Utilized ultrasonic sensor to detect object distances and devised a paradigm to discern the original moving object

**Remote Control Car** — Apr 2014 – Jun 2014
- Circuit design that connects motors, batteries, and embedded controller
- Developed a Smart Phone application that uses Bluetooth Low Energy to control toy car

**Shardio: A Shared Online Radio Platform** — Apr 2014 – Jun 2014
- Developed front-end web pages that contains fancy user/administrator portal, chatting room, music list, etc.
- Built back-end user upload system, administrator supervision function, and music information database

**One-on-one Chinese Chess Game** — Aug 2012 – Sep 2012
- Designed graphical user interface and realized the rules of the game with Qt (C++)
- Applied Internet Programming so people can connect through Internet to play.

**PUBLICATIONS**

K.-T. Chen, M.-C. Chiu, F.-E. Wang, J.-T. Lin, F.-H. Chan, Min Sun, "The World is Changing: Finding Changes on the Street," submitted to *Asian Conference on Computer Vision (ACCV) 2016*

**PROFESSIONAL EXPERIENCE**

**Broadsound Corporation**, Jupei City, Hsinchu, Taiwan. Jul 2013 – Sep 2013
Intern

- Completed full-stack production process of a Wind Gauge, including product design, system analysis, assembling, calibrating, testing, and exporting
- Involved in development of their all-in-one ProCheck software (including probe calibration, testing, and data collection) which became one of their major revenue source
- Final profit generation: About $100K

**TECHNICAL SKILLS**

- Programming Languages: C/C++ (Qt), Ocaml, Java, Python, PHP, Javascript, Scala, R, Verilog, LaTeX
- Engineering Software: MATLAB, HSPICE, Cadence

**ACADEMIC HONORS & AWARDS**

Selected as only one Honorary Member of Phi Tau Phi Scholastic Society in the department 2015
Awarded Excellent Study Group Award, NTHU 2015
Awarded National Tsing Hua University International Exchange Scholarship; Amount: $10K 2014

**CAMPUS ACTIVITIES**

**NTHU Orchestra**, National Tsing Hua University
Vice President Jul 2012 – Jun 2013
**Student Council**, National Tsing Hua University
Counselor Jul 2012 – Jun 2013

**OTHER WORK EXPERIENCE**

**Republic Of China (Taiwan) Army** Sep 2015 – Aug 2016
Compulsory Military Service

**REFERENCES**

**Professor Min Sun**
National Tsing Hua University
Department of Electrical Engineering
Email: sunmin@ee.nthu.edu.tw

**Professor Jerry Chou**
National Tsing Hua University
Department of Computer Science
Email: jchou@cs.nthu.edu.tw

**Professor Stergios Roumeliotis**
University of Minnesota, Twin Cities
Department of Computer Science and Engineering
Email: stergios@cs.umn.edu