

Ming-Chang (Eric) Chiu

<http://charismaticchiu.github.io/> • +1 702-209-6629

ericchiu0721@gmail.com • <https://www.linkedin.com/in/eric-chiu> • <https://github.com/charismaticchiu>

INTERESTS

My personal interest is at the intersection of computer cognition, machine learning and high-performance computing

EDUCATION

University of Southern California (USC)

Los Angeles, CA

Master (M.S.) in Electrical Engineering

Aug 2016 – May 2018 (Expected)

• Areas of Specialty: Data Science, Digital Signal Processing

• GPA: 3.73 / 4.0

National Tsing Hua University (NTHU)

Hsinchu, Taiwan

Bachelor of Science (B.S.) in Computer Science & Electrical Engineering

Sep 2011 – Jun 2015

• Last 60 GPA: 4.05 / 4.30, Cumulative GPA: 3.82 / 4.30

University of Minnesota

Twin-Cities, MN

Exchange Student in Computer Science and Engineering

Fall 2014

• GPA: 4.0 / 4.0, 15 credits

Tsinghua University

Beijing, China

Summer Exchange Student in Computer Science

Summer 2012

WORK

EXPERIENCE

Republic Of China (Taiwan) Army

Dongyin, Matsu

Soldier

Sep 2015 – Aug 2016

• Led physical and mental training sessions and proposed smartphone usage regulations

Vision Science Lab, NTHU

Hsinchu, Taiwan

Research Assistant [Project: The World is Changing: Finding Changes on the Street] Feb 2015 – Sep 2015

• Constructed image change detection model in MATLAB, successfully detected street view mismatches in Dash camera images with respect to preprocessed Google Street View (GFV) to provide updated information

• Applied RANSAC to re-outline the areas of mismatches in the original GFV images with accuracy outperforming baseline by 46%

• Devised a reusable manual labeling software and data types that recorded ground truth mismatch areas to help data collection

Large-scale System Architecture Lab, NTHU

Hsinchu, Taiwan

Research Assistant [Project: Re-scheduling Computing Job on Large-Scale System] Jul 2013 – Aug 2014

• Automated Hadoop benchmark (HiBench) to test performance of processing 8 types of computing job on 2 heterogeneous clusters using Perl

• Designed testing environment settings using Linux BASH shell scripts and analytically found suitable disk for certain computing job types

• Applied machine learning algorithm on Linux resource usage to discern types of computing and then moved the data to either Hard Disk or Solid-State Disk to proceed and so reduce power consumption

Broadsound Corporation

Hsinchu, Taiwan

Intern

Jul 2013 – Sep 2013

• Produced product Wind Gauge, including product design, supply chain analysis, assembling, calibrating, testing, and exporting

• Developed part of all-in-one ProCheck software in C (featuring ultrasound probe calibration, testing, and data collection) which became a major revenue source

• Generated about \$100K with teammates

PROJECTS

Movie Recommender

Mar 2015 – Jun 2015

• Implemented and tested 3 collaborative filtering algorithms in Python and utilized MovieLens dataset to recommend movies

• Back-end analysis system deployed on AWS EC2, enabling the recommender to regularly update recommendations by checking new user preferences

• Created front-end webpage using jQuery, AJAX and Bootstrap for visual effect

Dictionary Search Engine [Github](#)

Feb 2015 – Apr 2015

• Implemented PageRank algorithm for Apache Hadoop in JAVA and constructed a search engine which prioritizes relevant links

• Coded under scalable MapReduce framework on 8-node distributed computers allowing massive dataset to be processed

• Devised file system database for dictionary content retrieval by applying Apache Hbase and Hive

Autonomous Robotic Convoy System Design [Github](#)

Oct 2014 – Dec 2014

• Proposed an algorithm that allows rovers to move toward one and only one target even when doing sharp turns using C++

• Utilized ultrasonic sensor to detect object distances and translated information into 2D surface using gnuplot as human computer interface

• Devised a paradigm to discern the original moving object while multiple static and moving objects are present

	Remote Control Car Github Apr 2014 – Jun 2014 <ul style="list-style-type: none"> • Designed flip-flop circuit that controls electric current and connects power, RF dongle, and embedded controller; manipulated controller behavior in Python • Developed a smartphone application in JAVA, using Bluetooth Low Energy to transmit control signal
	Midnight Radio: A Shared Online Radio Platform Github Apr 2014 – Jun 2014 <ul style="list-style-type: none"> • Developed front-end webpages using jQuery, AJAX and Bootstrap featuring user/administrator portal, chatting room, music play list, etc. • Built back-end user upload system, administrator supervision function, and music information database in PHP and MySQL
	One-on-one Chinese Chess Game Aug 2012 – Sep 2012 <ul style="list-style-type: none"> • Designed graphical user interface and implemented the rules of the game with Qt (C++) • Applied C++ Internet thread programming which allows users to play through Internet connection
RELATED COURSEWORK	Analysis of Algorithms, Mathematical Pattern Recognition, Deep Learning and Computational Intelligence, Probability for Electrical and Computer Engineers, Simulation Methods for Stochastic Systems, Digital Signal Processing, Cloud Programming (A), Computer Graphics (A), Scientific Computing (A), Numerical Analysis (A), Operating System (A), Web Technologies (A), Software Engineering (A)
SKILLS	Languages: C/C++, MATLAB, Ocaml, Java, Python, HTML/CSS, PHP, SQL, BASH, Javascript Technologies: Hadoop, AWS, Git, jQuery, Linux, Spark
HONORS & AWARDS	Selected as Honorary Member of Phi Tau Phi Scholastic Society (only 1 in department) 2015 Awarded Excellent Study Group Award, NTHU 2015 Awarded National Tsing Hua University International Exchange Scholarship; Amount: \$10K 2014
LEADERSHIP	NTHU Orchestra , National Tsing Hua University Jul 2012 – Jun 2013 Vice President NTHU Student Council , National Tsing Hua University Jul 2012 – Jun 2013 Counselor
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