

Ming-Chang Chiu

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EDUCATION

University of Southern California (USC), Los Angeles, California, USA

Master (M.S.) in Electrical Engineering (Data Science)

Aug 2016 – May 2018 (Expected)

National Tsing Hua University (NTHU), Hsinchu, Taiwan

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

Sep 2011 – Jun 2015

- Selected as the only honorary member of Phi Tau Phi Scholastic Society in the department

- Last 60 GPA: 4.05 / 4.30 Cumulative GPA: 3.82 / 4.30

University of Minnesota, Twin-Cities, Minnesota, USA

Exchange Student in Computer Science; GPA: 4.0 / 4.0, 15 credits

Sep 2014 – Dec 2014

SKILLS

Languages: C/C++, MATLAB, Ocaml, Java, Python, HTML/CSS, PHP, SQL, BASH, Javascript, \LaTeX ,

Technologies: Hadoop, AWS, Git, jQuery, Linux, Spark

WORK

EXPERIENCE

Republic Of China (Taiwan) Army

Sep 2015 – Aug 2016

Compulsory Military Service

Broadsound Corporation, Jupei City, Hsinchu, Taiwan.

Jul 2013 – Sep 2013

Intern

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

RESEARCH

PROJECTS

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 (GVF)
- Applied RANSAC to re-outline the areas of mismatches in the original GVF images with accuracy outperforming baseline by 46%
- Devised a reusable manual labeling software and data types that recorded ground truth mismatch areas

Re-scheduling Computing Job on Large-Scale System

Jul 2013 – Aug 2014

- Applied Hadoop benchmark (HiBench) to test performance of processing different types of computing job on heterogeneous cluster 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

PROJECTS

Movie Recommender

Mar 2015 – Jun 2015

- Implemented and tested 3 collaborative filtering algorithms in Python and utilized MovieLens database 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

Dictionary Search Engine

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 retrieval function by applying Apache Hbase and Hive

Autonomous Robotic Convoy System Design

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

Remote Control Car

Apr 2014 – Jun 2014

- Designed flip-flop circuit that controls electric current and connects power, RF dongle, and embedded controller; manipulated controller behavior in Python
- Developed a Smart Phone application in JAVA using Bluetooth Low Energy to transmit control signal

Midnight Radio: A Shared Online Radio Platform

Apr 2014 – Jun 2014

- 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

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*