Ming-Chang Chiu

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INTERESTS

My interests are in computer cognition, robotics, machine learning and high-performance computing. I am interested in understanding scene details, predicting possible outcomes (if in dynamic) and predicting human reaction. The best case is proposing an end-to-end model capable of accomplishing multiple tasks.

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 model, 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 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
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 prioritizes the related links given a keyword
  • Coded under scalable MapReduce framework on 8-node distributed computers having storage/retrieval functions

Autonomous Robotic Convoy System Design   Oct 2014 – Dec 2014
  • Proposed an algorithm that makes rovers to recognize 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 connecting motors, batteries, and embedded controller
  • Developed a Smart Phone application that uses Bluetooth Low Energy to remotely control a toy car

Shardio: A Shared Online Radio Platform   Apr 2014 – Jun 2014
  • Developed front-end web pages including 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. Intern	Jul 2013 – Sep 2013

- Completed full-stack production process of a Wind Gauge, including product design, system analysis, assembling, calibrating, testing, and exporting
- Developed part 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	C/C++ (Qt), MATLAB, Ocaml, Java, Python, PHP, Javascript, AWS, MySQL LaTeX, Scala, R

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** Compulsory Military Service	Sep 2015 – Aug 2016

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