SHIH-MING WANG

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Education

M.S., Computer Science, University of California, Santa Cruz (GPA:3.87/4.0) Sep. 2016-Present
(Performed three years of studies in pursuit of Ph.D. before exiting program.)
M.S., Computer Science, National Taiwan University (GPA:4.21/4.3) Sep. 2012 - June 2014
B.S., Electrical Engineering, National Taiwan University Sep. 2008 - June 2012

Publication

Wang, S. M., & Ku, L. W. (2006). ANTUSD: A Large Chinese Sentiment Dictionary.

Wang, S. M., Tung, Y. F., & Yu, T. L. (2014, July). Investigation on efficiency of optimal mixing on various linkage sets. In 2014 IEEE Congress on Evolutionary Computation (CEC) (pp. 2475-2482). IEEE.

Wang, S. M., Wu, J. W., Chen, W. M., & Yu, T. L. (2013, July). Design of test problems for discrete estimation of distribution algorithms. In Proceedings of the 15th annual conference on Genetic and evolutionary computation (pp. 407-414). ACM.

Work Experience

Software Engineering, Google Inc., Mountain View, USA Jun. 2020 -

- Built Pixel 6 camera HAL software pipeline on the first generation of google in-house SOC Tensor with a focus on thread management and power optimization. Delivered manual white balance and learning-based color correction matrix (CCM) selection algorithm in google camera App.

Software Engineering Intern, Google Inc., Mountain View, USA Jun. 2019 - Sep. 2019

- **Android On-Device Video Intelligence - ML model evaluation and prototype**
  - The project focused on building machine learning model and pipeline for the video intelligence project, aiming to provide high level attributes for videos with on-device machine learning model. Adopted SceneNet and built an video classification pipeline using MediaPipe. Evaluated the performance of the method on the public Youtube-8M dataset.

Software Engineering Intern, Google Inc., Boulder, USA Jun. 2018 - Sep. 2016

- **HD Mapfacts Diff**
  - The goal of the project was to detect wrongly labeled building polygons in Geo team's Mapfacts database with up-to-date aerial image. Trained the semantic segmentation model, deeplabV3+, using high-quality labels and designed a heuristic algorithm comparing model predictions and human labels to detect potential wrong labels.

Research Experience

Machine Learning Research Assistant, Academia Sinica, Taipei, Taiwan Aug. 2015 - July 2016

- **Lightweight Discourse CNN Model for Sentiment Analysis**
  - Proposed a new CNN model incorporating the knowledge of discourse rules (e.g contrast and concession) and the learning ability of the deep neural network.
  - Performed experiments on several well-known sentiment analysis datasets (e.g. Stanford Sentiment Tree-bank) showing the simplicity and effectiveness of the proposed model.
- **Sensing Emotions in Text Messages**
  - Supervised on the project aiming to build a system that automatically conveys the emotion of received text to enrich the context in computer mediated communications.
  - Built sentiment classifiers from LiveJournal posts with pre-trained word embedding as features.
- **Augmented NTUSD**: Built a Chinese sentiment dictionary containing polarity information of words for use of research on sentiment analysis. Designed experiments to test the applicability of the dictionary.

Teaching Experience

Teaching Assistant, University of California, Santa Cruz Sep. 2016 - present

- Assisted with course: Introduction to Programming in Python (CMPS 5p), Algorithms and Abstract Data Types (CMPS101), Advanced Programming (CMPS 109), Comparative Programming Languages (CMPS 112)
- Conducted weekly lab sessions
- Provided individual and small group instruction during office hours
- Graded homework & exams

Teaching Assistant, National Taiwan University Sep. 2013 - June 2014

- Assisted with courses in Probability and Statistic, Algorithm, Genetic Algorithm
- Gave review lectures with designed problems
- Graded homework & exams

ACHIEVEMENT & AWARDS

Fellowship, University of California, Santa Cruz Jan. 2017 - Mar. 2017

Teaching Assistantship, University of California, Santa Cruz Sep. 2016 - present

Travel Grant of Domestic Graduate Attending International Symposiums, Ministry of Science and Technology, Taiwan Sep. 2014

Teaching Assistantship, National Taiwan University Sep. 2013 - June 2014

- Available to top 10% of graduate students.

Projects

Keraflow: Personal open source project implementing a deep learning library on top of **Theano** and **Tensorflow**. Redesigned the popular deep learning library Keras with the same utility but a simpler architecture aiming for easier development for package developers and clearer core dump for package users.
vim-netranger: Personal open source project. A ranger-like system/cloud storage explorer plugin for Vim, bringing together the best of Vim, ranger, and rclone.
Recommendation System on Yelp Data Course project for Machine Learning class (UCSC). Implemented (using only scipy & numpy) a hybrid collaborative filtering model combining neighborhood model and factorization model, trained by batch gradient descent.
Chinese OCR: Course project for the OCR contest in Machine Learning class (NTU). Implemented algorithms including naieve Bayes, support vector machine, neural network. **ChenLianYen**(Javascript): Course project implementing a web-based RPG game, where the user can control the role to explore the map and attack monsters on the map.

Extracurricular

Swimming Team of Medicine School, National Taiwan University 2012-2014

- Finisher, 1.25 miles open water swimming

Taichung City Alumni Club, National Taiwan University 2008-2011

- Deputy Director of Activity Group
- Convener of summer camp for freshman

Skills

Programming Language: C/C++, Java, Python, R, MATLAB, Javascript
Machine Learning Libraries: scipy, scikit-learn, Stanford CoreNLP, Keras, Theano, tensorflow
General: Git, neovim, pandas, matplotlib
Foreign Languages: Chinese (native), Taiwanese (intermediate)