

SHIH-MING WANG

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Education

M.S., Computer Science, University of California, Santa Cruz (GPA:3.87/4.0) Sep. 2016 - 2019
(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 Engineer, Google DeepMind, Mountain View, USA Feb. 2024 - Present

- Engineered the core evaluation infrastructure that supported the public launch of Gemini Live's native audio-in feature.
- Developed a novel LLM-based AutoRater to systematically evaluate and improve the quality of tool-using AI agents.

Software Engineer, Google Inc., Mountain View, USA Nov. 2023 - Feb. 2024

- Developed and shipped a media recommendation model for the Google Assistant media retrieval feature.
- Fine-tuned a Dual Encoder T5 model (deMuM) and built the end-to-end training data pipeline.
- Explored various training strategies, including advanced SamToNe loss and feature engineering with speech hypotheses, to improve model performance.

Software Engineer, Google Inc., Mountain View, USA May. 2022 - Nov. 2023

- Architected a template-based system for automated YouTube video ad generation, enhancing brand alignment by deriving color themes and fonts from advertiser web content.
- Engineered and deployed an online experimentation framework, conducting A/B tests that resulted in a 4% revenue increase.
- Pioneered the use of LLMs to automatically rephrase advertiser-provided text into compelling storylines for video ads.

Software Engineer, Google Inc., Mountain View, USA Feb. 2020 - Apr. 2022

- Led the development of the Pixel 6 camera HAL software pipeline on Google's first in-house SoC (Tensor), focusing on thread management and power optimization.
- Shipped key features in the Google Camera App, including manual white balance controls and a learning-based algorithm for color correction matrix (CCM) selection.

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

- Prototyped and evaluated an ML model for on-device video frame content labeling using SceneNet and deployed it within a MediaPipe pipeline.

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

- Innovated and implemented a system using deep segmentation models on aerial imagery to automatically detect outdated building labels in HD Maps.

Research Experience

Master Student, UCSC, Santa Cruz, CA Sept. 2016 - June 2019

- **Dataset synthesis with GAN and Spatial Transformer Network:** Synthesized datasets by training a GAN to generate a homography matrix, which was then applied by a Spatial Transformer Network to transform and stitch foreground images onto backgrounds.

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

- Proposed and validated a lightweight CNN model for sentiment analysis that incorporated discourse rules, demonstrating its effectiveness on benchmark datasets like the Stanford Sentiment Tree-bank.
- Built sentiment classifiers from LiveJournal posts using pre-trained word embeddings to automatically sense emotion in text messages.

Teaching Experience

Teaching Assistant, University of California, Santa Cruz Sep. 2016 - Jun. 2019

- Courses: Intro to Python, Algorithms Abstract Data Types, Advanced Programming, Comparative Programming Languages.
- Conducted lab sessions, held office hours, and graded homework and exams.

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

- Courses: Probability and Statistics, Algorithms, Genetic Algorithms.
- Gave review lectures and graded homework and exams.

ACHIEVEMENT & AWARDS

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

Teaching Assistantship, University of California, Santa Cruz Sep. 2016 - Jun. 2019

Travel Grant, Ministry of Science and Technology, Taiwan Sep. 2014

Teaching Assistantship (Top 10% of graduate students), National Taiwan University Sep. 2013 - June 2014

Projects

Keraflow: An open-source deep learning library built on Theano and Tensorflow, designed with a simpler architecture than Keras for easier development.

vim-netranger: A Ranger-like file system and cloud storage explorer plugin for Vim, integrating features from Vim, Ranger, and rclone.

Recommendation System: Implemented a hybrid collaborative filtering model in Python (scipy/numpy) for a course project, combining neighborhood and factorization models.

Skills

Programming Languages: Python, C/C++, Java, R, MATLAB, Javascript

ML Libraries: Tensorflow, Keras, Theano, scikit-learn, scipy, Stanford CoreNLP

Tools: Git, neovim, pandas, matplotlib

Languages: Chinese (native), Taiwanese (intermediate)