

Chih-Wei Chang

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<https://github.com/lazywei>

Education

Carnegie Mellon University, School of Computer Science

Pittsburgh, PA

M.S. Computational Data Science (MCDS) - Analytics Track

Expected Dec. 2017

- Relevant Courses: Machine Learning (PhD level), Machine Learning with Large Dataset, Search Engine, Intermediate Statistics

National Taiwan University

Taipei, Taiwan

B.S. Mathematics (CS related GPA: 3.91/4.30, Last 60 GPA: 3.87/4.30)

June 2015

- Relevant Courses: Advanced Topics in Multimedia Analysis and Indexing, Topics in ML, The Design and Analysis of Algorithms, Introduction to Scientific Computing, High Dimensional Statistical Analysis and ML

Experience

Co-founder & CTO, Yoctol Info, Taipei, Taiwan

July 2014 - July 2015

Yoctol provides data analysis consulting across industries including advertising, social media, and computer hardware.

- Designed and built the entire data infrastructures, including servers, automated testing and deployment environment with CircleCI and Docker, RESTful APIs with Rails, and front-end web interfaces with ReactJS.
- Co-developed internal automated machine learning analytics tools.

Full-stack Web Developer (intern), Codementor, Taipei, Taiwan

July 2014 - July 2015

Codementor (codementor.io) provides on-demand one-to-one online help in software development.

- Implemented various APIs on Heroku for both web interface and mobile; developed real-time online chatroom with Rails, ReactJS, and AngularJS.
- Independently built a mobile app with React Native.

Back-end Web Developer (intern), Polydice, Inc., Taipei, Taiwan

Feb. 2013 - July 2014

Polydice operates iCook (icook.tw), the largest recipe-sharing social website in Taiwan, with 1,200,000 active users.

- Revised internal auto deployment and scaling system with Chef and Amazon Web Services (AWS).
- Implemented service-oriented architecture and on-demand dynamic image resizing in Go.

Research Assistant, Computational Learning Lab, NTU

Feb. 2014 - Aug. 2015

Predicting dropouts in MOOC (ACM KDD CUP 2015)

Advisor: Prof. Hsuan-Tien Lin

- Contributed to feature generation and base models tuning in blending stage.
- Studied the relationship between RankBoost and Area-Under-Curve optimization, which resulted in the novel algorithm "Rank-Gradient Boosting Machines".

Top-down Tree with Boosting on cost-sensitive multi-label classification

- Designed an efficient boosting algorithm for multi-label classification with arbitrary costs.
- The algorithm integrates the key ideas of AdaBoost from binary classification, Classifier Chain from multi-label classification, and Filter Tree from cost-sensitive classification.

Selected Projects and Open Source

Lucene-based Search Engine

Search Engine Fall 16, Course Project

- Implemented a search engine in Java from scratch; built essential query operators and retrieval methods, including Boolean match, Indri, and BM25, based on Lucene index.
- Developed several state-of-the-art extensions to the search engine, such as query expansion with pseudo relevance feedback, learning to rank via RankSVM, and re-ranking through diversification algorithms.

Mockingbird: Language classifier augmentation for Linguist

GitHub, Google Summer of Code 2015

- Reduced memory usage and eliminated possible memory leak by rewriting the classifier from Ruby to Go.
- Implemented Go wrapper for LIBLINEAR C library to enable the use of different linear classifiers such as Logistic Regression and Linear SVMs; the wrapper source is released as "LIBLINEAR (Go wrapper)".

Ruby and Rails benchmark system on Docker

Ruby on Rails, Google Summer of Code 2014

- Built a long-running benchmark system for both Rails and Ruby; the system utilized Docker for an independent and parallelizable benchmarks running environment.

Scikit-Learn: Implemented multi-label classification related algorithms.

GoLearn: Designed the earliest library structures and interfaces as a core contributor.

LinearGo: Built Golang wrapper for LIBLINEAR, a library for large linear classification.

Skills

Language: Python, Ruby, Go, JavaScript, C/C++, UNIX shell script, R, Haskell

Tools: AWS, Chef, Ansible, Docker