William Chien

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Education

Carnegie Mellon University — Pittsburgh, PA
B.S. in Computer Science — Aug 2022 - May 2026

- GPA: 4.0/4.0
- Current Coursework: Machine Learning, Software Engineering, Automated Program Verification
- Past Coursework: Parallel and Sequential Algorithms, Computer Systems, Data Structures and Algorithms, Theoretical Computer Science, Functional Programming, Discrete Math, Linear Algebra, Vector Calculus

Experience

Software Engineer Intern — May 2023 – Aug 2023
Ambarella Inc — Santa Clara, CA

- Created and optimized various ML tools and backend infrastructure for computer vision on autonomous vehicles
- Wrote Python scripts to automatically test models, tune parameters, and collect data while using Docker containers
- Ported Quantization Aware Training to proprietary models in ONNX format using TensorFlow and PyTorch APIs to increase accuracy by more than 50% for models with lower bit-precisions
- Designed end-to-end Jupyter Notebooks that allowed 3rd party consumers to train, test, and deploy various models like YOLOv7, DETR, and ResNet for individualized use cases using Ambarella's tools

Computer Science Teaching Assistant — Aug 2023 – Present
Carnegie Mellon University — Pittsburgh, PA

- TA for Parallel and Sequential Algorithms in Spring '24, Functional Programming in Fall '23
- Led weekly 50-80 minute recitations on topics like Djikstra's Algorithm, Dynamic Programming, and Concurrency
- Held weekly office hours, grade homework and tests, and answer questions on Piazza

Machine Learning Research Assistant — Dec 2022 – Jun 2023
Carnegie Mellon University — Pittsburgh, PA

- Worked with Prof. Dannenberg (founder of Audacity) to predict musical sequences using ML models
- Constructed Markov Order Models in Python using NumPy to stochastically generate melodies
- Improved the accuracy of Maximum-Entropy Expectation Networks by 8% by testing, gathering data on, and adjusting hyperparameters, confidence measures, and prediction rules

Projects

Recidivism Prediction Algorithm | *Python, TensorFlow, NumPy*

- Developed a criminal recidivism likelihood prediction algorithm in Python as an alternative to COMPAS
- Built and trained convolutional neural networks using TensorFlow, NumPy, and publicly available datasets
- Saw an 11% increase in accuracy and half the number of false positives when compared to COMPAS

AI Chess | *Java, Swing*

- Coded a fully functional two player Chess game in Java using Swing for the user interface
- Added 5 levels of AI opponents using a minimax-based tree search position evaluation algorithm

Dynamic Memory Allocator | *C/C++*

- Produced a text-file compression algorithm using trees and variable length encoding in C
- Saved up to 85% memory on larger text files after compression

Skills

Languages: Java, Python, C/C++, Standard ML (Functional), HTML/CSS
Technologies: PyTorch, TensorFlow, Pandas, NumPy, Docker, Jupyter Notebook, ONNX, Git
Honors: Two Time NSDA National Finalist in Extemp Speaking, CA State Runner Up in Impromptu Speaking