Kyle Tsuji

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EDUCATION

University of California, Davis **Davis, California**

Bachelor of Science in Computer Science September 2019 - December 2023

- **Highlighted Courses:** Artificial Intelligence, Machine Learning, Operating Systems, Computer Architecture, Algorithm Design and Analysis, Assembly Language Programming, Game Theory, Data Structures, Object-Oriented Programming, Technology Management, Public Speaking, Writing in the Professions: Science

COURSEWORK AND PROJECTS

- **Deep Neural Network (Python)** - Worked in a group of 4 to design and implement a deep neural network that can detect multiple kinds of network traffic intrusions using an IoT Intrusion dataset. Practiced data preprocessing by normalizing attributes and used one hot encoding for output classes. Created an initial model which was improved upon multiple times by removing undersampled classes, and adding more hidden layers and nodes. Each model was fit with training data and analyzed with testing data, and the results of each model were compared.
- **Memory Allocator (C) -** Implemented a memory allocator that can allocate memory to users and free memory objects. Requests bytes from the OS during initialization, then returns a requested size of memory to the user. Can accept a pointer and free the memory block pointed to. A free list is used to track free memory space and coalesce adjacent free space. Accepts four different algorithms for determining which free memory block to return when searching for memory in the free list to allocate.
- **Unix Utilities (C) -** Built alternate versions of the commonly used UNIX commands *cat, grep, zip,* and *unzip*, called *wcat, wgrep, wzip,* and *wunzip. wcat* reads an input file and prints its contents. *wgrep* searches through a file line by line, finding and returning the line that contains a user-specified term. *wzip* uses run length encoding to compress a file. *wunzip* reads a compressed file and writes the uncompressed result to standard output.
- **Probability Distribution Analysis (R, Latex)** - Collaborated with two other peers to find real world datasets represented by normal, exponential, gamma and beta families in order to analyze density, maximum likelihood estimators, and method of moments estimators of the parameters of each family.

TECHNICAL SKILLS

Python, C++, Java, R, C, SQL, Erlang, Prolog, Haskell, Unix, MatLab, HTML, Javascript, Github, Latex, Google Colab, Google Suite

EMPLOYMENT & INTERESTS

Current Employment: (February 2024 - Present) Tutor at Mathnasium - Teaching STEM subjects to students in high school and below, working collaboratively with instructors to ensure optimized learning
Involvement: Former piano teacher and youth basketball assistant coach
Volunteer Work: Roundhouse Aquarium, Pediatric Therapy Network
Interests: Competitive basketball player, sports fanatic, admirer of traveling