TYLER YANG

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EDUCATION

University of California, Berkeley | Intended Graduation: May 2025   **GPA: 3.82/4.0**
B.A. Computer Science, Physics minor
- <u>Relevant Coursework</u>: Data Structures, Machine Structures, Efficient Algorithms, Multivariable Calculus, Discrete Math, Probability Theory, Thermodynamics, Quantum Mechanics, Linear Algebra, Differential Equations, Computer Security

PROFESSIONAL EXPERIENCE

UC Berkeley Department of EECS| Berkeley, CA   *August 2023 - Present*
Undergraduate Course Staff – CS61C – Machine Structures
- Aiding a 750-student class during Office Hours and forums, addressing questions on C, RISC-V, circuitry, and parallelism
- Dedicating 8+ hours a week to creating course materials such as exam questions and grading exams and assignments

UC Berkeley Department of EECS| Berkeley, CA   *January 2022 – May 2022*
Academic Intern – CS61A
- Assisted 30+ students in solving introductory python, Scheme, and SQL problems in weekly lab sections
- Produced and taught 15-minute lectures given to clarify student's understanding of concepts covered in the previous week

nth Solutions | Exton, PA   *June 2020 – June 2021*
Data Analyst Intern›
- Designed experimental physics trials as part of product quality assurance for a patented physics sensor device
- Developed data conversion scripts for analyzing harmonic time series in MATLAB, python, Octave and R.
- Constructed regression models for comparing on-vehicle tire balancing data using TensorFlow and PyTorch
- Utilized low pass filtering toolboxes in Python to process on-vehicle tire data
- Developed a quaternion to Euler angle conversion script for sensor fusion of accelerometer and gyroscope data

PROJECTS

Ketchup
- Developing a Quality-Of-Life MacOS client that scrapes iMessage data and performs topical analysis and summarization
- Utilized TauriApp, Next.js for frontend; employed LangChain and leveraged the power of GPT-4 LLM for topic summarization; created custom scraping solution to retrieve data from iMessage SQLite database

NetflixGPT
- Developing a Netflix AI chatbot companion with peers that provides spoiler-free Q&A using OpenAI's LLMs
- Built a FastAPI RESTful backend using LangChain for multi-stage prompting, pinecone for storing plot summary embeddings, and a custom web-scraping algorithm using MediaWiki framework and SerpAPI

Gitlet
- Developed a file version-control system inspired by git capable of initializing a directory, adding files to stage, commit changes/files to directory, printing a log of commits, create branches, switch between branches and merge branches
- Use of a cryptographic hash function to produce a unique ID for each file and prevent collision of names; in addition to utilizing various data structures and techniques such as Hashmaps, Treemaps, Breadth-First Search for each command.

Convolutions
- Created and optimized a matrix convolution algorithm in C utilizing SIMD, OpenMP and Open MPI parallelism

Scheme Interpreter
- Developed interpreter for Scheme language through Python evaluating both special forms and procedure calls

EXTRACURRICULAR ACTIVITIES

Associated Students of UC, Office of the Chief Technology Officer (ASUC OCTO) | Berkeley, CA   *February 2023 – Present*
Developer
- Working with a team to create a platform for student organizations to communicate with the Student Association (ASUC), post vital information about their clubs, and streamline the process to request funding and filling logistical forms.
- Developing a user messaging and authentication component utilizing React.js, Node.js, and Socket.IO

UC Berkeley Department of Music| Berkeley, CA   *July 2022 – Present*
Instructor – "Playing By Ear" Class
- Co-teaching a student-facilitated class for 3+ semesters, instructing 25 students on the art of playing music by ear
- Producing and teaching lectures on music theory, ear training, improvisation, and fundamental piano skills

SKILLS & INTERESTS

Technical Skills: Java, Python, C, SQL, NumPy, MatPlotLib, pandas, MATLAB, Scheme, SciPy, REST API, Assembly (RISC-V), HTML/CSS, Node.js, React.js, LangChain, Next.js
Interests: Meteorology, Geography, Piano, Music Transposition, Football, Skiing, Lacrosse, Infrastructure, Airplanes, Architecture