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

- Relevant Coursework: Structures and Interpretation of Computer Programs, Data Structures, Machine Structures, Efficient Algorithms, Classical Mechanics and Special Relativity, Electromagnetism and Optics, Multivariable Calculus, Discrete Math and Probability Theory, Thermodynamics and Quantum Mechanics, Linear Algebra and Differential Equations

PROFESSIONAL EXPERIENCE

UC Berkeley Department of EECS| Berkeley, CA *January 2022 – May 2022*
Academic Intern

- 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

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

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

UC Berkeley Department of Music| Berkeley, CA *July 2022 – Present*
Instructor – "Playing By Ear" Class

- Co-teaching a student-facilitated class for 2+ semesters, instructing 25 students on the art of playing music by ear
- Individually meeting with 5 students per semester to give one-on-one lessons on specific areas of trouble or interests
- Producing and teaching lectures on music theory, ear training, improvisation, and fundamental piano skills
- Providing constant feedback on playing style and pieces through assignments so there can be a step-by-step improvement

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