TYLER YANG

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EDUCATION

University of California, Berkeley | Intended Graduation: May 2025   **GPA: 3.85/4.0**

B.A. Computer Science

- <u>Relevant Coursework</u>: Data Structures, Machine Structures, Efficient Algorithms, Multivariable Calculus, Discrete Math, Probability Theory, Operating Systems, Machine Learning, Linear Algebra, Differential Equations, Computer Security

PROFESSIONAL EXPERIENCE

Climate Dynamics at Berkeley (Boos Group) | Berkeley, CA   *September 2023 - Present*

Undergraduate Researcher

- Analyzing extreme precipitation data from weather stations in Cameroon utilizing Xarray, TAHMO API, and NumPy
- Constructed a running Cron shell script that scrapes daily satellite data to be assessed for continuous precipitation trends.
- Developed a shell script cron job to scrape daily satellite data and generate various extreme precipitation plots.
- Building a dynamic website for precipitation data visualization integrating 1-Day IMERG data to display various cumulative plots, including recent 5-day rainfall, daily timelines, real-time vs. historical averages, and annual totals.

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 course walkthroughs

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›

- 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

NetflixGPT

- Developing a Netflix and Crunchyroll AI chatbot companion 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

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

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
- Utilized 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 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, Javascript, Typescript, NumPy, MatPlotLib, pandas, MATLAB, Scheme, SciPy, Xarray, REST API, Assembly (RISC-V, x86), HTML/CSS, Node.js, React.js, LangChain, Next.js, GoLang, Rust, Pytorch

Interests: Meteorology, Geography, Piano, Music Transposition, Football, Skiing, Lacrosse, Infrastructure, Airplanes, Architecture