TYLER YANG

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EDUCATION

University of California, Berkeley | Intended Graduation: May 2025 **GPA: 3.85/4.0**
B.A. Computer Science

- Relevant Coursework: Classical Mechanics, Quantum Mechanics, Electricity and Magnetism, Data Structures, Operating Systems, Efficient Algorithms, Multivariable Calculus, Probability Theory, Machine Learning, Computer Security, Networks, Digital Design

PROFESSIONAL EXPERIENCE

Goldman Sachs | New York, NY *June 2024 – August 2024*
Software Engineering Intern/ Summer Analyst

- Automated the applied margin calculation process for 25000 commercial loans, simplifying visualization for bankers
- Utilized a Domain Specific Language to format and parse Credit Agreement rules into custom data structures for frontend
- Built an interactive object-based model for forming complex, multi-element logical rules
- Engineered the backend using Python and ANTLR4 for DSL processing; designed a frontend with Typescript and React

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 cumulative plots- including recent 5-day rainfall, real-time vs. historical averages; actively used by farmers in Kumbo, Cameroon (80,000 pop)

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, running weekly mini lectures, and grading work

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
- 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 5+ 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, Verilog
Interests: Meteorology, Geography, Piano, Music Transposition, Football, Skiing, Lacrosse, Infrastructure, Airplanes, Architecture