TYLER YANG

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PROFESSIONAL EXPERIENCE

RTL DESIGN ENGINEER *July 2025 - Present*
Annapurna Labs/Amazon| Cupertino, CA
- Designing and Developing part of the accelerator block for Tranium 4

SATURN VECTOR CORE TEAM *January 2025 - May 2025*
BearlyML'25/DSP'25| Berkeley, CA
- Developing custom physical design configurations of Saturn Vector Unit Integrated Rocket Cores designed specifically for the needs of Bearly or DSP chips to Tapeout (Custom Cache Sizes, Register File Sizes, Data-bus width, FPU units)
- Integrating tightly coupled accelerators onto Core [Outer Product Engine], resolving DRC/LVS issues on block-level
- Creating vector benchmark tests for DSP Wavelet Engine, 1D/2D Convolution Accelerator, and Outer Product MatMul.

SOFTWARE ENGINEERING INTERN/SUMMER ANALYST *June 2024 – August 2024*
Goldman Sachs| New York, NY
- 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

UNDERGRADUATE RESEARCHER *September 2023 - June 2025*
Climate Dynamics at Berkeley (Boos Group) | Berkeley, CA
- Developing custom precipitation-based metric that predicts the Indian Monsoon Onset using numPy matrix manipulation
- Assessing skill of metric through analyzing 20+ years of IMERG satellite date, IMD data, and AI forecasting Models [AIFS]
- Analyzing correlation between onset dates and seasonal statistics [ENSO, MJO period, IOD] to improve forecast skill
- Analyzed extreme precipitation data from weather stations in Cameroon utilizing Xarray, TAHMO API, and NumPy
- 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)

UNDERGRADUATE TA – CS61C – MACHINE STRUCTURES *August 2023 – January 2025*
UC Berkeley Department of EECS| Berkeley, CA
- Aided a 750-student class during Office Hours and forums, addressing questions on C, RISC-V, circuitry, and parallelism
- Dedicated 8+ hours a week to creating course materials, running weekly mini lectures and recording walkthroughs

PROJECTS

RISC-V CPU
- Designed a 3-stage pipelined RISC-V CPU utilizing ASIC architecture fitted with a direct-mapped, write-back memory cache, WB-EX data hazard forwarding, branch prediction, stall logic, and optimal Place and Route. Utilized Verilog

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

Optimized Convolution
- Utilized a Manager/Child framework (Open MPI), thread level parallelism (Open MP) and Intel Intrinsics to achieve 8x speed up from a naive convolution script. Implemented in C

EDUCATION

University of California, Berkeley | Graduation: May 2025 **GPA: 3.88/4.0**
B.A. Computer Science
- Relevant Coursework: IC Digital Design [ASIC], Computer Architecture, Networks, Data Structures, Operating Systems, Efficient Algorithms, Multivariable Calculus, Probability Theory, Machine Learning, Computer Security

SKILLS & INTERESTS

Technical Skills: SystemVerilog, Verilog, Scala, Chisel, Python, C, C++, Java, SQL, Javascript, Typescript, NumPy, pandas, MATLAB, Scheme, SciPy, REST API, Assembly (RISC-V, x86), HTML/CSS, Node.js, React.js, LangChain, Next.js, GoLang, Rust, Pytorch