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Todd Simonson

SOFTWARE ENGINEER / BACKEND & CLOUD / AI APPLICATIONS

Southern California · Open to relocation

Backend engineer who designs, ships, and deploys software systems end-to-end — ML platforms, distributed web services, and cloud automation. M.S. Computer Science candidate (**4.0 GPA**) with prior industry experience building data and experimentation infrastructure at scale.

01 TECHNICAL SKILLS

Languages: Python · TypeScript · JavaScript · Java · C++ · SQL · Bash

Backend & APIs: FastAPI · Flask · REST APIs · WebSockets · API Design · SQLAlchemy · Authentication

Frontend: React · Next.js · HTML · CSS · Tailwind

Databases: PostgreSQL · SQLite · DynamoDB

Cloud & Infrastructure: AWS (EC2, ECS, Lambda, DynamoDB, IAM) · Docker · Linux · GitHub Actions · CI/CD

Machine Learning & AI: XGBoost · LightGBM · scikit-learn · Pandas · NumPy · LLM Integration

Security: CompTIA Security+ · Secure Development Practices

02 SOFTWARE ENGINEERING PROJECTS

CERES Machine Learning Platform

Python · FastAPI · React · PostgreSQL · Docker

- Architected an end-to-end ML decision platform — FastAPI service layer with REST and WebSocket APIs, PostgreSQL persistence, React dashboard, Dockerized deployment — managing 396 versioned model artifacts across live and backtest workflows.
- Designed regime-routed ensemble inference (XGBoost, LightGBM) spanning 11 assets across 3 market regimes, dynamically selecting models from detected market conditions.
- Eliminated training/serving skew by unifying live execution and walk-forward backtesting behind a single shared decision engine. The same code path validates strategies offline and executes them live.
- Built operational tooling for supervised runtime: 2-second WebSocket telemetry, automated risk controls, execution reconciliation, and monitoring dashboards.

AI Job Search Agent

Python · FastAPI · Ollama · Playwright

- Designed an asynchronous ingestion pipeline aggregating 5,600+ postings from six heterogeneous sources, with deduplication, ranking, and relevance scoring feeding a human-in-the-loop review workflow.
- Integrated local Ollama inference for cover-letter generation, producing 885 DOCX, PDF, and text artifacts without external LLM API dependencies.
- Automated multi-step application staging with Playwright browser automation, exposed through FastAPI workflow and review endpoints.

SurfTide Multi-Chain Platform

TypeScript · React · Solidity · PostgreSQL

- Shipped a multichain platform deployed across 13 EVM networks — TypeScript/React frontend, backend services, and a PostgreSQL data layer serving token metadata, chat, transactions, and OHLCV market data.
- Authored Solidity contracts for factory deployment, bonding-curve trading, ERC-20 permits, and automated liquidity migration.
- Integrated wallet connectivity, Graph protocol indexing, GraphQL APIs, IPFS uploads, and on-chain contract execution into a unified product.

Low-Power RISC-V Processor Simulation

gem5 · C/C++

- Quantified DVFS energy/performance trade-offs in gem5 across three operating points (200/100/50 MHz), modeling cache hierarchy, memory systems, and embedded workload behavior against a 141K-instruction control benchmark.
- Demonstrated estimated energy reductions of 21.8% and 39.2% versus the high-performance baseline while preserving workload deadlines.

03 EXPERIENCE

Independent Software Engineer

2023 – Present

- Own the full engineering lifecycle for deployed software systems — requirements, architecture, implementation, deployment, and ongoing operations — across the ML, automation, and web platforms above.
- Operate cloud infrastructure on AWS (EC2, ECS, Lambda, DynamoDB, IAM) with Dockerized services and GitHub Actions CI/CD pipelines supporting continuous testing and deployment.
- Apply production engineering discipline as a solo operator: automated testing in CI, versioned releases, monitoring, and incident response on live trading systems.

OKX — Growth & Data Manager

2021 – 2023

- Optimized allocation of \$30M+ in annual acquisition spend through dataset management, analysis, and measurement frameworks at a top-tier global crypto exchange.
- Partnered directly with engineering teams on attribution systems, experimentation infrastructure, analytics platforms, and API integrations — including instrumentation validation and data-quality investigation for business-critical reporting.
- Drove decisions across engineering, product, analytics, and growth stakeholders, translating between technical and business domains.

AppTweak — ASO Analyst

2019 – 2021

- Automated recurring analytical workflows using APIs and structured datasets, replacing manual reporting processes.
- Delivered marketplace and search-visibility analysis and technical recommendations to software, fintech, gaming, and SaaS clients.
- Used API-driven analysis workflows to evaluate keyword rankings, metadata performance, and competitive search visibility across mobile software markets.

04 EDUCATION & CERTIFICATIONS

University of the Cumberland

Expected 2027

M.S. Computer Science · GPA 4.0

Relevant coursework: Algorithms & Data Structures, Computer Architecture, Systems Programming, High-Performance Computing, Secure Software Development

Arizona State University

2024 – 2026

Post-Baccalaureate Computer Science Coursework

University of San Diego

B.A. Biophysics · Ronald E. McNair Scholar · NSF STEM Scholar

Certification: **CompTIA Security+** · DoD 8570/8140 baseline compliant
