MICHAEL BATRAKOV

+1 (408) 669-9401 | michaelbatrakov@gmail.com | linkedin.com/in/michaelbatrakov

SKILLS

- **Programming:** Python, C/C++, MATLAB, TypeScript, JavaScript, R, Bash/Shell/CShell Scripting
- **Frameworks & Libraries:** Pandas, NumPy, Matplotlib, Seaborn, Django, React JS, Next JS, Svelte, Flask, Regex, SQLite, FastMCP
- **Databases:** PostgreSQL, MySQL, Firebase, MongoDB, SQLite
- **Machine Learning:** TensorFlow, PyTorch, Scikit-learn, Keras. Fundamental and abstract understanding of CNNs, RNNs, hyperparameter tuning, regularization, optimization techniques, and best practices for structuring and scaling machine learning projects.
- **DevOps & Tools:** Git, Docker, CI/CD Pipelines, Linux Server Management, Gunicorn, Nginx, Apache, WebSockets, Agile, Jira, Confluence, LabVIEW, ROS, Modbus, Altair Monitor,
- **AI Infrastructure**: RAG (Retrieval-Augmented Generation), MCP (Model Context Protocol), API Security, Prompt Engineering
- **Web Development:** Full-Stack, RESTful APIs, Authentication Systems (Okta, LDAP, OAuth), Caching, Optimization, Software Architecture.
- **EDA License Management:** License Server Administration, Usage Auditing, Automated Alerting, AI-Driven Support Systems, FlexLM
- **Certifications & Courses:** Neural Networks & Deep Learning, Statistical Consulting, Deep Learning Specialization (Stanford Online)

EXPERIENCE

Marvell Semiconductor — **Santa Clara, CA**
EDA Infrastructure Engineer — April 2025 - Present

- Designed **2 specialized AI agents**—a high-powered CAD agent that provides advanced reporting and monitoring of license data through use of RAG, API, and MCP tools. Regular streamlined license agent for all engineers that resolves most common license issues—reducing ticket volume and improving efficiency.
- Deployed a secure self-service web-based license platform built on python (flask) from scratch that's **used by 180+ unique users with 500+ weekly visits.** Serving as the central hub for real-time license tracking, reporting, and self-service support for CAD and engineering teams, as well as **powering the AI license agents**.
- Programmed a scalable algorithm—using object-oriented and functional programming principles—to **parse, centralize, and secure license data from 20+ servers and 4 databases**. The solution enables real-time, role-based access via a custom API, powering both AI agents and a web platform. The architecture combines regex, caching, data centralization, augmentation, and optimized/ideal data structures to ensure efficiency, modularity, and maintainability.
- Perform advanced data analysis and reporting, generating custom usage reports to audit license patterns, optimize spending, and forecast future needs.
- Provide comprehensive EDA tool and license support for **2,000+ engineers**, including tool and license installations, troubleshooting, and resolving license checkout issues.

Northrop Grumman | Space Sector — **Los Angeles, CA**
Electrical & Test Systems Engineer Intern — June 2024 - August 2024

- Conducted MIL-STD-1540 and NASA-STD-7001-compliant stress testing.
- Designed and deployed a centralized lab management dashboard, digitizing work orders, equipment tracking, and testing logs to replace paper-based workflows. **Reduced equipment downtime by 25%** and enabled **live pricing updates**, driving operational **savings of up to $25K/month**.
- Partnered with technicians, test engineers, and managers to integrate the dashboard into daily workflows. Facilitated training sessions and authored user documentation.

Sentons — **Sunnyvale, CA**
Robotics & Test Automation Engineer — April 2022 - October 2023

- Developed a Python-based CLI tool for automated robotic touchscreen testing, eliminating manual processes and **increasing throughput by 40%**.
- Designed and implemented a Raspberry Pi-based robotic arm using low-level Python and C++/ROS, integrating TensorFlow Lite for real-time movement optimization. Achieved a **30% reduction in calibration time** and enhanced positional **accuracy to ±0.1 mm**, enabling precise testing of touchscreens.
- Reduced touchscreen error to **<0.2 mm per touch point** via statistical analysis of SNR/force data.
- Secured a Fortune 500 client by presenting statistically validated test results and reliability metrics.

PROJECTS | [github.com/serge133]

Personal Portfolio | s171717.com/me

AI/ML: Neural Network Visualizer | nn-visualizer.netlify.app (*live demo* | *open source)*

EDUCATION

University of California, Los Angeles (UCLA) | GPA: 3.75/4.00 — **Los Angeles, CA**
B.S. in Statistics and Data Science — April 2025

De Anza College — **Cupertino, CA**
A.S. in Mathematics (with Honors) — June 2023