MICHAEL BATRAKOV

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Bridging Robotics, Electrical Engineering, and Software to Build Intelligent Systems

EXPERIENCE

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

- **Hardware Testing & Validation**: Conducted MIL-STD-1540 and NASA-STD-7001-compliant stress testing (vibration, thermal, voltage) on satellite components, achieving **99.5% reliability** across 50+ test cycles.
- **Real-Time Process Automation:** 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 $25K/month**.
- **Cross-Disciplinary Collaboration**: Partnered with technicians, test engineers, and managers to integrate the dashboard into daily workflows. Facilitated training sessions and authored user documentation, ensuring 100% adoption and **reducing workflow disruptions by 20%**.

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

- **Robotic Test Automation:** Developed a Python-based CLI tool for robotic touchscreen testing, eliminating manual processes and increasing throughput by 40%.
- **ML-Driven Robotic Arm**: 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.
- **Modbus Integration**: Developed a **Modbus communication protocol** to interface with an industrial oven and temperature probe, enabling real-time temperature monitoring and control. Improved thermal testing accuracy by **15%** and reduced manual intervention by **25%**.
- **Data-Driven Optimization**: Reduced touchscreen error to **<0.2 mm per touch point** via statistical analysis of SNR/force data.
- **Client Acquisition:** Secured a Fortune 500 client by presenting statistically validated test results and reliability metrics.

PROJECTS | [github.com/serge133]

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

- Developed an interactive tool to visualize deep neural networks with real-time neuron activations.
- **Used by classmates** in UCLA Stats 101C to deepen understanding of neural networks.

Realtime Notification Board for University Cooperative Housing Association (uchaonline.com) (*proprietary)*

- **Real-Time Systems Development**: Built a real-time notification and multimedia display system for **450+ residents** at UCHA across **7+ monitors**, using WebSocket protocols to ensure instantaneous updates. The system supports a dynamic slideshow of videos, images, and notifications, maintaining 60 FPS performance with zero crashes under stress testing.
- **Community Engagement:** Boosted resident participation by displaying real-time updates, event highlights, and multimedia content, fostering a stronger sense of community.

EDUCATION

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

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

SKILLS

- **Programming**: Python, C/C++, MATLAB, TypeScript, JavaScript, R
- **Frameworks & Libraries**: Pandas, NumPy, Matplotlib, Seaborn, Django, React JS, Next JS, Svelte
- **Databases**: MySQL, PostgreSQL, Firebase, MongoDB
- **Machine Learning**: TensorFlow, PyTorch, Scikit-learn, Keras
- **Tools**: Git, Docker, CI/CD, LabVIEW, ROS, Jira, Confluence, Agile, AWS
- **Certifications & Courses**: UCLA Neural Networks & Deep Learning (EC ENGR C147), Statistical Consulting (STATS 141XP), Deep Learning Specialization by Andrew Ng (5 course series) by Stanford Online
- **Languages:** English, French, Russian