Michail Shatalov

BS Electrical Engineering — UC Santa Barbara

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Technical Skills

Languages: Python, Matlab, Bash, Verilog, JavaScript, Java
ML Frameworks: PyTorch, TensorFlow/Keras, JAX, Hugging Face, OpenCV
Core ML: Deep learning, transformers, diffusion & flow models, VAEs, graph neural networks
Tools: Git/GitHub, Docker, Jupyter, Linux CLI, Jira, Trello, Excel, LaTeX
Methods: Cloud computing, data visualization, hyperparameter optimization, literature review, documentation

Soft Skills

Clear technical communication • Creative problem-solving • Project planning and organization

Professional Experience

Unconventional Systems Lab, UCSB *Undergraduate Researcher — 10/2025–Present*
Accelerating flow and diffusion model inference by mapping neural networks onto probabilistic computers through hardware–software co-design, targeting optimization and generative AI workloads.

Tensor Therapeutics, San Diego *ML Engineering Intern — 06/2025–09/2025*
Applied machine learning methods to accelerate drug discovery workflows, including data-driven screening, molecular property prediction, and optimization of candidate compounds.

UCSD Physics Department, San Diego *Poster Presentation — 09/2024–05/2025*
Presented a research poster introducing a new ensemble boosting method that enforces model diversity by incorporating structural symmetries.

DRS Daylight Solutions, San Diego *Engineering Intern — 09/2023–12/2023*
Designed and implemented an automated screw-sorting system using computer vision and mechanical separation for an internal rapid-prototyping competition. Placed **1st out of 10** intern teams.

Gateways Summer School, San Diego *Camp Counselor — 06/2024–07/2024*
Led daily interactive STEM activities for 30 students aged 6–14, promoting curiosity and scientific thinking.

Projects

UCSD HDR ML Challenge Hackathon *01/12/2025*
2nd place finalist out of 50 teams; built anomaly detection pipeline for LIGO gravitational-wave data using variational autoencoders and transformer architecture.

Manim GPT Instructional Math Video Generator *08/2024–04/2025*
Co-developed AI math tutor with High ML club, combining LLM agents and Manim animation library to generate video.

"Dawn Runner" Hybrid Rocket Engine *07/2023–09/2025*
Led systems-level design, build, and static-fire tests of a hybrid rocket engine, including electronics and propulsion.

Academic History

UC Santa Barbara — BS Electrical Engineering *09/2025–2028 (In progress)*
GPA: **3.94 / 4.00**

Miracosta College — UC breadth completed during high school *06/2023–08/2025*

Canyon Crest Academy — High School Diploma *08/2021–05/2025*
ML Club President • Speech & Debate Team Captain

Relevant Coursework

Machine Learning • Linear Algebra • Signal Processing • Data Structures & Algorithms • Computer Architecture
In progress: Game Theory for Networked Systems • Real Analysis