

Anthony Marinov

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EDUCATION

Master of Science in Structural Engineering (Computer Science Focus) | University of California, San Diego | **GPA: 4.0/4.0** June 2026

Bachelor of Science in Structural Engineering | University of California, San Diego | **GPA: 3.88/4.00**

June 2025

SKILLS

- **Languages:** Java | Python | C | C++ | Fortran | TypeScript | JavaScript | SQL | Bash | HTML/CSS | MATLAB
- **Technologies:** OpenMP | MPI | ROCm | HIP | CUDA | Docker | Git | MySQL | Amazon Web Services (AWS) | Linux
- **Frameworks & Libraries:** Spring | Django | Next.js | React.js | Node.js | Jest | Jenkins | JUnit | Tensorflow | PyTorch
- **Programs:** Abaqus | Solidworks | SAP 2000 | RISA | LabVIEW | AutoCAD | Revit | Excel
- **Sensing & Instrumentation:** Sensors | Data Acquisition | Signal Processing | Spectral Analysis | Structural Health Monitoring
- **Engineering:** Finite Element Analysis (FEA) | Optimization | Product Design | Composites | Steel | Concrete | Timber

EXPERIENCE

Amazon | Software Development Engineer Intern

June 2025 - Sept 2025

- Architected and launched a retry mechanism for transactional notifications in the new customer experience (CX) architecture, resulting in 550,000 additional new CX notifications being sent per day worldwide
- Streamlined exception handling across multiple interconnected services, bringing the logic ownership to a single service
- Developed a system for monitoring notification rendering failures in the new CX architecture, giving away teams the ability to independently monitor and set alarms on rendering failures for the notification templates they own

San Diego Supercomputer Center (UC San Diego) | Graduate Student Researcher

Oct 2025 - Current

- Develop and accelerate meshfree nonlinear Finite Element Analysis (FEA) + topology optimization workflows on exascale-class HPC systems for impact-resistant metamaterial design
- Refactor and productionize research codebases in Fortran/C++/Python for AMD MI300A-based HPE supercomputers, emphasizing GPU/APU offload and reproducible HPC deployment
- Benchmark and optimize distributed + threaded performance (profiling, scaling studies, communication overhead), partnering with scientists to improve algorithmic scalability for next-gen simulation packages

MiTek | Research and Development Engineer Intern

June 2024 - Sept 2024

- Led the creation of an AI generative design program using Python, XGBoost, and TensorFlow, alongside a cost and time estimation tool in Excel, to optimize lateral system design for wood light-frame construction
- Collaborated with cross-functional teams to establish a new design philosophy for MiTek's lateral solutions, reducing construction time by up to 20% with minimal cost impact through data-driven insights from the program
- Created a comprehensive documentation package for internal distribution and delivered a tutorial presentation to global team leadership, detailing the program's features, usage, and potential for further development

PROJECTS

Portfolio Optimization: Growth vs. Dividends | (Python, SciPy, YFinance)

anthonymarinov.com/articles/portfolio-optimization

- Developed a Python backtesting framework with DRIP-enabled total return simulation to evaluate growth vs. dividend exposures across 10/20/30-year windows using ETF proxies and custom stock baskets
- Framed asset allocation as a constrained optimization problem and used SciPy to optimize both total return and risk-adjusted return (Sharpe), showing how regime coverage materially changes optimal allocations

Custom Generative Pretrained Transformer (GPT) | (Python, PyTorch)

anthonymarinov/custom-gpt

- Developed a custom Transformer model in PyTorch inspired by GPT-2 and the *Attention is All You Need* paper to generate Shakespearean-style text
- Implemented multi-head self-attention, positional encoding, and layer normalization with optimizations (residual connections, dropout, manual attention) to improve performance and reduce overfitting