Anthony Marinov

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EDUCATION

Master of Science in Structural Engineering (Computer Science/Tech) | University of California, San Diego | **GPA: 4.0/4.0** June 2026
Bachelor of Science in Structural Engineering | University of California, San Diego | **GPA: 3.87/4.00** June 2025

SKILLS

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

EXPERIENCE

MiTek | R&D 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

Alpha MM Inc | Software Engineer Intern June 2023 - June 2024

- Developed a custom full-stack CRM application using Python, Django, and MySQL to manage client information, project scheduling, invoicing, and financial tracking
- Established an efficient CI/CD pipeline with Jenkins and Docker, automating unit testing and deployment to AWS for streamlined integration and delivery
- Designed a machine learning pricing and expense model using TensorFlow in Python, improving client quoting accuracy and project expense estimation, which increased project margins by 7% on average

PROJECTS

Custom Generative Pretrained Transformer (GPT) | *(Python, PyTorch)* anthonymarinov/custom-gpt

- Developed a custom implementation of the Transformer architecture based on the GPT-2 framework and the "Attention is All You Need" paper to generate Shakespearean-style text
- Built the model from scratch in PyTorch, implementing core components like multi-head self-attention, positional encoding, and layer normalization to handle long-range context
- Optimized training with residual connections, dropout, and manual attention mechanisms to enhance performance and minimize overfitting

GPT-2 Based Chatbot | *(Python, Flask, React.js, Node.js)* anthonymarinov/chatbot-gpt2

- Built a full-stack chatbot application with a React.js frontend for user interaction and a Flask backend powered by GPT-2 to generate conversational responses
- Integrated cross-origin communication using Flask-CORS, enabling seamless interaction between the frontend and backend

Soil-Water Retention ML Model | *(Python, Keras/Tensorflow, Sklearn, Matplotlib)* anthonymarinov/soil-water-retention

- Developed non-isothermal machine learning models to predict soil saturation based on matric suction and user-specified temperatures, extending capabilities beyond traditional isothermal models
- Optimized model performance using cross-validation and custom loss functions, ensuring accurate predictions across varying geotechnical conditions