Ryan Nguyen

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OBJECTIVE

Software Engineer with 1+ year of experience in machine learning research, seeking internship roles.

EDUCATION

Bachelor of Computer Science, University of Virginia *Expected 2027*

- GPA: 3.9/4.0

SKILLS

- Programming Languages: Python, C++, Java, HTML, CSS, JavaScript, Typescript, JSON, Rust
- Frameworks & Libraries: React.js, Next.js, Node.js, TensorFlow, PyTorch, NumPy, MongoDB
- Tools & Platforms: Amazon Web Services, Linux, Jupyter Notebook, Anaconda, Git, Vercel, Vim
- Miscellaneous: Fusion360, Internet of Things (IoT), Circuit Assembly, Microsoft Office

EXPERIENCE

UVA Infrastructure Simulation, Sensing and Evaluation Lab (I-S^{2}EE)

Research Assistant *September 2023 – Present*

- Hired as research assistant to the UVA I-S^{2}EE Lab; was selected from a competitive pool of 50+ first- and second-year undergraduates with only one open position.
- Utilized **machine learning** to simulate structural mechanics without conventional methods or equations.
- Authored STRUCT+, an **augmented reality app** to perform >80% accuracy structural analysis. See Projects.
- Learned finite element analysis via tools such as **Ansys**, and how to simulate it with a **TensorFlow** model.

PROJECTS

Cory: AI Meal Generator Assistant

Personal Project *July 2024 – Present*

- Engineered an **AI-powered API** (using **AWS Lambda** & **API Gateway**) to return curated meal recipes based on user-inputted nutritional values (ex. 15g of fat, 50 g of protein), and return as **JSON** format. 95%+ success rate @ ~3000ms response time.
- Integrated an AWS backend using **DynamoDB** and **S3**. Used **AWS Cognito** for authentication.

STRUCT+: Augmented Reality & ML Structural Analysis

UVA I-S^{2}EE Lab *September 2023 – Present*

- **Augmented reality-** and **ML-**enabled app to simulate >80% accuracy structural analysis in real time.
- Achieved a <500ms round trip time for invoking the model and displaying visual results back to the screen.
- Coded in **Swift** for the **iOS** platform and used a custom **TensorFlow Lite** model trained from 8000+ inputs.

Personal Resume Website (r-nguyen.com)

Personal Project *August 2023 – Present*

- Full stack web application with **MongoDB Atlas** deployment in the backend and 3 custom database **APIs**.
- Utilized **React.js** to build and the **Next.js** framework by **Vercel** to deploy. Approximately 8 unique weekly visits.
- Implemented a multi-user reminder system with a real time countdown. Used Google OAuth2 for authentication.

Machine Learning Algorithm to Predict Rainfall

Personal Project *August 2021 – May 2022*

- Engineered a numerical weather prediction (NWP) neural network using **TensorFlow**, **PyTorch**, and **NumPy** in **Jupyter Notebook**. The optimized model was accurate to $\pm$7.72mm of predicted rainfall.
- Programmed another script to scrape 81,000+ days of NOAA historical weather data and preprocess such data.

CERTIFICATIONS

Amazon Web Services Certified Cloud Practitioner *Expires June 2027*