Neil Goyal

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Education

Georgia Institute of Technology Atlanta, GA

Bachelor of Science in Computer Science *Graduation: May 2025*

- **Major GPA:** 4.0/4.0 (Faculty Honors, Dean's List)
- **Specializations:** Artificial Intelligence, Computer Networking, Databases

Experience

Amazon Inc. May 2024 - August 2024

Software Development Engineer Intern

- Built a Feature Gating Service for the Career Choice program to tailor educational offerings based on job attributes.
- Developed an Admin Central UI with React and TypeScript for real-time visibility configuration and historical tracking.
- Utilized AWS (Lambda, DynamoDB, OpenSearch) for scalable, high-performance storage with <300ms response times.
- Implemented monitoring with AWS CloudWatch and rigorous Hydra integration testing to ensure system robustness.

CureGenie June 2023 - June 2024

Co-Founder

- Developed an AI-powered dietetics and fitness planner, placing 1st out of 800+ projects at the UC Berkeley Hackathon.
- Secured funding from Berkeley SkyDeck and prominent VC firms, propelling the project's transition into a start-up.
- Utilized LangChain and Anyscale to analyze blood test reports, seamlessly integrating data into the AI framework.
- Enabled dynamic user schedule integration with MindsDB, deploying the solution on AWS for robust access.

Chevron Corp. May 2023 - August 2023

Software Engineer Intern

- Engineered a Large Language Model utilizing LangChain to automate the generation of Azure pipeline configurations.
- Deployed the LLM as an Azure chat-bot to generate task-specific Ansible roles, improving deployment efficiency by 15%.
- Optimized the LLM to create precise pipeline files, significantly improving deployment safety and operational efficiency.
- Wrote a PowerShell script for efficient retrieval of files from Azure DevOps projects, further boosting team productivity.

Georgia Tech Research Institute January 2023 - May 2024

Research Assistant

- Performed low-level analysis of FPGA netlists and software modeling of FPGA architecture (details classified).
- Developed a fuzzing program in C to investigate Kernel components and detect vulnerabilities in Windows Defender.
- Identified and documented 100+ vulnerabilities through strategic fuzzing, significantly bolstering software security.
- Resolved over 10 pivotal issues in renowned fuzzing tools like WinAFL and Winnie, markedly enhancing their efficiency.

Projects & Organizations

Schema-Driven Information Extraction | *Georgia Tech NLP Lab* Aug. 2023 – Dec. 2023

- Fine-tuned open-source Large Language Models for schema-driven information extraction from heterogeneous tables.
- Utilized Self-Instruct to enhance models like Llama 2, using the model's own generations as instructional data.
- Enhanced the model's performance to exceed current benchmarks in the extraction of tabular data from research papers.

Machine Learning for Financial Markets | *Georgia Tech Vertically Integrated Projects Program* Jan. 2023 – May 2024

- Developed a predictive model using scikit-learn and TensorFlow to predict future earnings of large technology firms.
- Published a research paper showcasing a 6% increase in model accuracy compared to existing literature and studies.
- Leveraged AutoML systems and NLP models to predict stock price volatility using earning calls transcripts.

Lo-Fi Music Generator | *The Agency - Georgia Tech's AI/ML Club* August 2022 – May 2023

- Designed a Transformer-based model trained on the MAESTRO dataset using TensorFlow to generate Lo-Fi music.
- Utilized the GANSynth (Adversarial Neural Audio Synthesis) algorithm for better performance than RNN-based models.
- Implemented Relative Attention to allow the Transformer to generate continuous melodies beyond the training dataset.

Technical Skills

Languages: Python, JavaScript, Java, C/C++, C#, Kotlin, Dart, Swift, GNU Octave, MATLAB, SQL, HTML/CSS
Frameworks: TensorFlow, Flutter, Node.js, Flask, Django, WordPress, Keras, PyTorch, Unity Engine
Concepts: Data Structures and Algorithms, Object-Oriented Programming, Machine Learning, Deep Learning, Computer Vision, Human-Computer Interaction