Nathan D. Wang

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Objective

Highly motivated software engineer seeking a challenging role to apply my skills and knowledge in developing innovative software solutions. I am also interested in machine learning and plan on leveraging my knowledge and experiences in both fields to develop better products.

Education

Georgia Institute of Technology | Atlanta, GA   **Degree: May 2024**
    Masters of Science, Machine Learning   GPA: 4.00/4.00
    Bachelor of Science, Computer Science   GPA: 3.92/4.00

Relevant Courses

Automata and Algorithms, Deep Neural Networks, Machine Learning, Computer Vision, Cybersecurity, Game AI, Computer Networking, Web Application Development, Big Data Analytics, Natural Language Processing

Experience and Projects

- **Amazon Web Services CSA** (2024 – Present):
  - Currently working full time as a continuation of my internship in the services of S3 CDK and CLI, EFS, Backup, Snowball family, and other data migration services.
  - Use linux commands, AWS CDK, and internal consoles to interact with business and enterprise level customers with high expertise and knowledge of my services.
  - Build scripts using multiple AWS services (IAM, CloudWatch logs, S3 ACLs) to facilitate proper, semi-automated, secure replication of S3 buckets across regions.

- **Amazon Web Services CSA Intern** (May 2023 - August 2023):
  - Practiced agile workstyle, thorough system design, and well-architected AWS framework solutions for security and fault tolerance of applications.
    - Implemented load balancers and auto-scaling to enhance application scalability and reliability of clients' applications, as well as multi-AZ deployment to address fault tolerance.
    - Properly set up IAM and roles with AWS CDK for secure access control and authentication.
  - Built a web application extension for Amazon phone tools with AWS Rekognition and SageMaker implementation.

- **Machinify Inc SWE Intern** (May 2021 - August 2021):
  - Worked in an Agile workspace, contributing to the enhancement of data pipelines by integrating SQL capabilities directly into the website's infrastructure under the guidance of CEO Dr. Prasanna Ganesan.
    - Focused on facilitating secure data manipulation and retrieval for the website's features and powering model inferences with efficient Java API endpoints.
  - Developed user-friendly interfaces and improved the overall user experience of the company's software products.
  - Wrote Python scripts to conduct automated extensive testing and debugging.

- **Intelligent Digital Communications VIP ML Research at Georgia Tech** (2021 - 2024):
  - Published paper 1238, "Cognitive Wireless Networks: Research Applications and Testbed," to IEEE Technical Papers Conference under Dr. Edward Coyle, focusing on near real-time classification of wireless signals using various machine learning techniques and testbeds.
  - Applied multi-model, hierarchical deep neural networks with FFT half window digital signal processing techniques and embedded systems for improved accuracy of RF telecommunication technologies and signal classification.
  - Employed COCO annotation automation, PySpark for big data processing, ViT FasterRCNN backbones, and state of the art network architecture search for higher quality research.

- **Large Language Model Compression Research Group** (2023 - 2024):
  - Researched methods to improve LLM compression with a 3.43% improvement in perplexity while decreasing the number of parameters by 22.36% using state-of-the-art dynamic grouped heads and non-linear layers between heads to mitigate accuracy loss.
  - Worked under Dr. Alexey Tumanov and employed PACE-ICE clusters to efficiently train and attain better metrics with less memory requirements with multi-model LLMs with our proposed modifications on Meta's open source Llama 2 model.

- **Big Data Big Impact Club Committee** (2022 - 2023):
  - Built a flight delay predictor application aimed at reducing the impact of increased flight delays and cancellations. During the data preprocessing phase, I employed Flask and AWS RDS to manage big data gathered from multiple government data sources.

Skills

Programming Languages: Java, JavaScript, Python, C, HTML/CSS, MATLAB, SQL
Frameworks and Tools: ReactJS, Node.js, Express, AWS CDK, Github, Linux, Flask, D3.js, PyTorch, Ubuntu VM, scikit-learn, PySpark, Kafka
Software Development Lifecycle: Agile, Figma

Achievements

Faculty Honors (2020 - 2023): Awarded to undergraduate students who receive a GPA of 4.0 in 12 or more credits in a semester
Certifications: AWS Certified Cloud Practitioner, AWS Solutions Architect Associate, AWS ML Specialization, Stanford ML Specialization