

# NATHAN SCHNEIDER

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[nschneider.dev](https://nschneider.dev) | [LinkedIn](#) | [Github](#)

## EDUCATION

**Dartmouth College**, Hanover, NH

**June 2022**

*Bachelor of Arts, Major in Computer Science, Minor in Engineering Sciences*

**GPA 3.80**

**Relevant Coursework:** ML, AI, RL, Robotics, Algorithms, Discrete Mathematics

**Major GPA 3.88**

**Honors/Awards:** Citation for Meritorious Performance in Introductory CS, OOP, Machine Learning

## SKILLS

Programming Languages: Python, Java, JavaScript/Typescript, Bash, Go, C

AWS / Cloud Computing: AWS CDK, Bedrock, Lambda, Cloudformation, API-Gateway, S3, DynamoDB, Cloudwatch

Machine Learning/Computer Vision: Tensorflow, scikit-learn, OpenAI Gym, Jupyter Notebook, PiCamera, OpenCV

Data Science: R, RStudio, Tidiverse, NumPy, Pandas, Pyplot, SQL

Productivity: Git, Slack, Github, Zoom, Microsoft Office, Google Drive, Zenhub

Other: Strong communication skills, Diverse mathematics background, Interdisciplinary team experience

## WORK EXPERIENCE

**Amazon Web Services**, Seattle, WA

**April 2025 - Present**

*Software Development Engineer, II AWS Bedrock Guardrails*

- Launched LLM backed guardrail tiers, now processing over 150M tokens/minute for over 60 languages
- Optimized prompt based systems for latency, cost, and availability with prompt caching, cross-region inference
- Configured Guardrail Image Filter model for inference, improving throughput 50% with multi-tenant GPU hosts
- Developed an internal-only system for in-domain confidence of Guardrails content moderation

**Amazon Web Services**, Seattle, WA

**September 2023 - April 2025**

*Software Development Engineer, AWS Bedrock Guardrails*

- Launched customer-configurable PII detection guardrails for AWS Bedrock, now processing 250M tokens/minute
- Increased language model performance 84% with Flash Attention and classification heads, increasing throughput
- With these optimizations, reduced hosting costs by 64% across our 4000 GPU fleet, reducing customer costs
- Leveraged AWS CDK Infrastructure-as-Code to deploy across 25 AWS regions with 99.99% availability
- Served as engineering liaison for a team of PHD Machine Learning scientists to optimize SLMs for inference

**Amazon Web Services**, Seattle, WA

**August 2022 - September 2023**

*Software Development Engineer, AWS IoT Greengrass*

- Using AWS CDK IaC, implemented native AWS canary services to monitor the health of our product
- Officially recognized by team for outstanding work in over 45% of sprint retrospectives
- Developed open-source software components with high availability for intelligent edge systems

**Amazon Web Services**, Seattle, WA

**May 2021 - September 2021**

*Software Development Engineer Intern, AWS IoT Device Ecosystem*

- Designed and implemented a cloud based hardware mutex for collaboration and automation in software testing
- Through investigation and research, diagnosed and defined team productivity losses

**DALI Lab**, Hanover, NH

**November 2019 - January 2021**

*Full-Stack Software Engineer*

- Engaged in 18+ hour work weeks on DALI Lab projects while maintaining full course load
- Collaborated with an interdisciplinary Agile team to design, develop, and deploy multiple projects

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## PROJECT EXPERIENCE

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### ***MANI: Gesture Controlled Virtual Assistant***

**November 2022 - June 2022**

- Led a team of peers develop a gesture-based virtual assistant, utilizing computer vision and machine learning
- Integrated Mediapipe Hands for feature analysis to scikit-learn time-series models for gesture classification
- Optimized pose tracking computer vision models using Google Coral tensor processing units (TPUs)
- Deployed software and motorized robotic peripherals on Raspberry Pi computers

### ***Transfer Reinforcement Learning with a Robotic Manipulator***

**October - November 2021**

- Created a custom OpenAI Gym environment for a reinforcement learning task: Sliding puck manipulation
- Trained and evaluated Proximal Policy Optimization (PPO) models in a custom simulation for the task
- Implemented the model in the real world, using an ABB IRB 120 Robotic Manipulator Arm and PiCamera

### ***Computer Vision Raspberry Pi Projects***

**December 2020 – July 2021**

- With Python, OpenCV, Tensorflow implemented several Computer Vision Projects on Raspberry Pi's
- Utilized GPIO, TPU, and PiCamera peripherals to process the environment and control robotic components
  - Squirrel Cam - Surveilled bird feeders to identify and spray unwanted squirrels with water
  - Robot Follower - Small wheeled robot designed to follow the wearer of an Aruco fiducial marker
  - Facial Recognition Doorbell - Identified visitors by their faces to play a unique audio greeting