

VIBHU AGRAWAL

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EDUCATION

University of Maryland — College Park, MD

Master of Science in Computer Science

Bachelor of Science in Computer Science with Specialization in Machine Learning

GPA: 3.92/4.00

Expected May 2025

Relevant Coursework:

Data Structures, Algorithms, Artificial Intelligence, Machine Learning, Compilers, Natural Language Processing, Parallel Computing (C/C++, CUDA), Reinforcement Learning (OpenAI Gym), Computer Vision (NumPy, PyTorch), Data Science (Scikit-learn, Pandas)

EXPERIENCE

Amazon: Software Development Engineer Intern | Kotlin, Typescript

May 2023 - Aug. 2023

- Designed and implemented a complete end to end workflow for a new feature to improve customer experience by allowing advertisers to view predictive analytics on the sizes of targeting audiences
- Used AWS cloud services including Lambda, DynamoDB, EventBridge, and S3 to architect a resilient, scalable solution
- Ensured software reliability and functionality by writing comprehensive unit tests with Mockk and Mockito, validating code integrity and minimizing potential errors

Hack4Impact: Tech Lead | ReactJS, NodeJS, Bootstrap, Firebase

Jan. 2021 - May 2023

- Developed websites in a team environment for non-profit organizations like Inspire and Empower, which works to reduce women's barriers to enter STEM fields, Sustainability Solutions Group, and Step Up, a free tutoring service
- Led a team of 6 engineers in development of a project for a client that used Airtable, Firebase, ReactJS over 9 months

Maryland Robotics Center: Research Intern | Python

Jan. 2022 - Mar. 2023

- Utilized historical data from campus electric scooters to develop graph based path planning algorithms for global navigation spanning medium to long distances in self driving scooters
- First author in paper submitted to IROS 2023, work showcased in Maryland Robotics Center Research Symposium

Amazon Web Services: Software Development Engineer Intern | Typescript, ReactJS, NodeJS

May 2022 - Aug. 2022

- Developed an internal portal for use by 200+ AWS service teams that eliminated a large portion of open ticket backlog
- Created web forms that allowed for metric creation and validation for service performance monitoring, used internal APIs to fetch data, cut dashboard tickets, and developed unit tests using Mocha
- Reduced time required to process AWS Dashboard metric request tickets by 80% from 35.2 days to just 7 days

PROJECTS

Memaid | Flutter, Python, WebRTC, Google Cloud

- Developed mobile app to assist those with memory loss through facial recognition and conversation summarization
- Worked primarily on the computer vision and natural language processing backend, using Haar Cascades for facial detection, a neural network for facial recognition, and large language models for conversation summarization
- Outcompeted 90 other teams for Best Use of Google Cloud and Best Social Good Hack prizes at Bitcamp hackathon

MLP and CNN for Handwritten Digit Classification | Python, OpenCV, PyTorch

- Created a fully connected neural network (MLP) from scratch using classes and objects in Python, used sigmoid activation function, wrote back propagation algorithm using Jacobian matrices and trained on 50K MNIST images
- Achieved 94% test accuracy on the MLP and 99% test accuracy on a Convolutional Neural Network using PyTorch after using regularization, data augmentation, and dropout to correct for overfitting

SKILLS

Python, Java, Kotlin, JAX, Typescript, ReactJS, C, Swift, SQL, Javascript, MATLAB, R, OpenCV, PyTorch, Git

PUBLICATIONS

S. Bandyopadhyay, V. Agrawal, et al. "Goal-Conditioned Recommendations of AI Explanations". *NeurIPS 2023 Workshop on Goal-Conditioned Reinforcement Learning*. (2023)