

VIBHU AGRAWAL

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EDUCATION

University of Maryland — College Park, MD

GPA: 3.89/4.00

Bachelor of Science in Computer Science with Honors, Minor in Advanced Cybersecurity (ACES)

Expected May 2024

Relevant Coursework:

Natural Language Processing, Parallel Computing, Reinforcement Learning (OpenAI Gym), Computer Vision (NumPy, PyTorch), Machine Learning, Penetration Testing (Python, Powershell, Metasploit), Algorithms, Data Science (Scikit-learn, Pandas), Computer Systems (C, Assembly), Object-Oriented Programming II (Advanced Java)

EXPERIENCE

Rezoom — College Park, MD

Jan. 2022 - Present

Maryland Robotics Center Research Intern | *Python*

- Worked in a team led by Dr. Derek Paley to analyze historical data from Veo scooters to develop graph based path planning algorithms to assist with global pathfinding for self driving scooters

Hack4Impact — College Park, MD

Jan. 2021 - Present

Software Developer → Tech Lead | *ReactJS, NodeJS, Bootstrap*

- 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
- Used agile development methodology and ReactJS and Bootstrap to deliver dynamic and responsive websites to clients
- Led development of custom React-Bootstrap components and created a custom CMS using Strapi and Axios API

Amazon — Seattle, WA

May 2022 - Aug. 2022

Software Development Engineer Intern | *Typescript, ReactJS, NodeJS, Redux*

- As part of Amazon Incident Response, 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 and 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 named entity recognition for conversation summarization
- Outcompeted 90 other teams for Best Use of Google Cloud and Best Social Good Hack prizes at Bitcamp hackathon

Ply | *Typescript, VSCode*

- Contributed to open-source project Ply written in Typescript, a tool to automate REST and GraphQL API testing
- Fixed an open issue with the VSCode extension by adding functionality to interact with the graphical UI using the command palette and hotkeys

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
- To compare performance, created a Convolutional Neural Network using PyTorch
- Achieved 94% test accuracy on the MLP and 99% test accuracy on the CNN after using regularization, data augmentation, and dropout to correct for overfitting

SKILLS

Languages: Python, Java, Typescript, ReactJS, C, Swift, SQL, HTML, CSS, Javascript, MATLAB, Ruby, OCaml, R, Rust

Tools: Git, OpenCV, Jira, Bootstrap, PyTorch, Tensorflow, Tailwind, XCode, MongoDB, ExpressJS, VSCode, Jupyter, Linux