VIBHU AGRAWAL

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EDUCATION

University of Maryland — College Park, MD — GPA: 4.00/4.00
Master of Science in Computer Science — *Expected Dec. 2024*
Bachelor of Science in Computer Science with Specialization in Machine Learning
Relevant Coursework:
   Data Structures, Algorithms, Databases, 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

OrbitalPoint AI: **Machine Learning Intern** | *Python, LangChain, Flask, Vue.js* — May 2024 - Aug. 2024
- Developed an application for a startup to enhance call center customer experience using OpenAI's Whisper for accurate transcription and speaker identification.
- Integrated transcriptions into Azure Cosmos DB vector databases, enabling customer-facing chatbots with Retrieval-Augmented Generation (RAG) backed by GPT-4 to answer customer questions asynchronously
- Constructed knowledge graphs to analyze call transcripts, providing insights into common issues and solutions

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

<u>**Memaid**</u> | *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

SKILLS

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

PUBLICATIONS

"Goal-Conditioned Recommendations of AI Explanations" | *NeurIPS 2023 Workshop on Goal-Conditioned Reinforcement Learning*

"SAIL: Self-Improving Efficient Online Alignment of Large Language Models" | *ICML 2024 TF2M Workshop*