

# VIBHU AGRAWAL

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## EDUCATION

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University of Maryland — College Park, MD

Master of Science in Computer Science

Bachelor of Science in Computer Science with Specialization in Machine Learning

GPA: 4.00/4.00

Expected Dec. 2024

### 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

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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 MongoDB Atlas 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

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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

## SKILLS

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

## PUBLICATIONS

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"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