

AMAN CHOUDHARY

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<https://amanchoudhary2020.github.io/portfolio/>

Education

University of Michigan, Ann Arbor

August 2020 – December 2023

Bachelor of Science in Engineering in Computer Science

GPA: 3.77/4

Coursework: Distributed Systems, Natural Language Processing, Computer Vision, Operating Systems, Web Systems, Machine Learning, Computer Security, Computer Architecture, Linear Algebra, Multivariable Calculus, Advanced Probability

Technical Skills

Programming Languages: C++, Python, Rust, JavaScript, Go, Scala, MATLAB, SQL, Java, HTML/CSS

Libraries/Frameworks: (ML/AI) TensorFlow, Keras, scikit-learn, NLTK, PyTorch, OpenCV (Full Stack) React, Flask, Next.js, Node.js, Cordova

Software Development Tools: Git, Docker, AWS, Unix, NGINX, CI/CD

Work Experience

Deepgram, Inc.

May 2023 – August 2023

Software Engineering Intern

San Francisco, CA

- Created an automated CI/CD pipeline with GitHub Actions to run a suite of Rust tests against new releases of automatic speech recognition engine, reducing deployment speeds 2.5x and increasing confidence in release process
- Wrote a custom Rust crate to evaluate ASR transcription quality 10x faster than existing Rust libraries, using cached data from a REST API server built with Flask, NGINX, and Docker for ASR quality metric calculations
- Researched inference engine optimizations to speed up inference runtimes 1.3x with similar accuracy

Criteo Co.

May 2022 – August 2022

Software Engineering Intern

Ann Arbor, MI

- Developed a Spark pipeline written in Scala to improve monitoring of data quality of retail media advertising events, storing real-time updates in Hive databases and updating metrics dashboards
- Tuned Spark performance to optimize the run time of a suite of Spark jobs that process large-scale advertising event datasets on an hourly basis

Trashbots Co.

June 2021 – August 2021

Software Engineering Intern

Austin, TX

- Integrated new features to their web-based application using JavaScript and Cordova, empowering the platform to teach programming concepts like looping and object-oriented programming to 1500 K-12 institutions across the United States
- Updated MicroBit-based robot compatibility for new firmware with C++ to ensure seamless compatibility between app and robot across product updates

Research Experience

Michigan Vision Lab

January 2024 – Present

Visiting Researcher

- Exploring methods for camera calibration and pose estimation driven by neural networks and vision transformers to achieve superior performance on applications involving structure from motion (SfM) and 3D scene reconstructions

Diagnostic Intelligence Augmented for Global Health (DIAG)

January 2023 – December 2023

Data Engineering, Modeling, and AI Researcher

- Performed a study on effectiveness of deep convolution neural networks in accurately classifying bladder cancer
- Leveraged a combination of Inception v3 architecture with artificial features extracted from ImageNet, achieving an 87% classification accuracy on TCGA bladder cancer dataset

Predicting News Reader Feedback with Deep Learning

August 2021 – April 2022

Undergraduate Research Opportunity Program (UROP) Researcher

- Performed linguistic analysis of questions and comments on social media posed to new stories, to help news organizations anticipate information needs of their audiences
- Developed and tested regression, SVM, and LSTM models for predicting audience engagement on news articles using scraped social media data related to major news organizations

Projects

Search Engine: Built a scalable search engine using PageRank ranking system, a segmented inverted index of scraped web pages created with Hadoop framework, and a distributed system for determining search results

Operating System: Wrote a thread library, virtual memory pager, and networked file system with C++

Extracurriculars: Private Guitar Instructor, Michigan Jam Club, V1 Entrepreneurship, Michigan Mars Rover Perception Team (2020-21)