

VIBHHU SHARMA

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Education

University of Massachusetts, Amherst

Feb 2021 – May 2024

Bachelor of Science in Computer Science and Mathematics

GPA: 4.0

Awards: Dean's List Honors, \$64,000 Chancellor's Scholarship, Best Web Hack at HackUMass 2020

Selected Coursework: Machine Learning, Artificial Intelligence, Quantum Computing, Graph Theory, Scientific Computing, Algorithms, Programming Methodology, Data Structures, Web Development, Abstract Algebra, Discrete Mathematics

Technical Skills

Languages: Python, Java, JavaScript, TypeScript, C, C++, Bash, HTML, CSS, SQL, GraphQL

Tools and Frameworks: Git, Docker, Amazon Web Services, Node.js, Selenium, Streamlit, Pandas

Experience

Amazon Web Services

June 2023 – Aug 2023

Software Development Engineer Intern

Seattle, WA

- Delivered a feature for Amazon CodeCatalyst by designing and implementing a scalable and performant solution.
- Provisioned and configured the cloud infrastructure (virtual private cloud, clusters etc.) required to run a containerized task and controlled the inbound/outbound traffic through security groups.
- Automated the building, testing, and deployment processes by creating a CI/CD workflow using CodePipeline.
- Verified the integrity of transferred data by utilizing a cryptographic hash function, performed mock unit testing using the Jest framework, and wrote canary tests to continually ensure correct functioning.

Lab for Advanced Systems Software, UMass Amherst

June 2022 – Aug 2022

Software Engineering Intern

Amherst, MA

- Developed a data analytics and visualization web dashboard using Streamlit to help users study their sleep data.
- Organized and analyzed sleep data by using Pandas dataframes and generated charts using Matplotlib and Plotly.

Human-Computer Interaction and Visualization Lab, UMass Amherst

May 2021 – June 2021

Undergraduate Research Volunteer

Remote

- Generated an artificial dataset of ~6000 colored polygonal maps by writing a Python script that computes the Delaunay Triangulation of randomly generated points and visualizes the result using Plotly.
- Analyzed the impact of using the artificially generated dataset for training a binary classifier while experimenting with various hyperparameter choices.

Microsoft

March 2021 – May 2021

Tech Resilience Program Participant

Remote

- Solved mathematical and computational challenges under the guidance of two software engineers at Microsoft.

Projects

Course Availability Notifier | React.js, Selenium, AWS Amplify, Lambda, EventBridge, GraphQL

Dec 2022

- Developed a full-stack web application which alerts users on Discord when courses of their choice become available.
- Wrote a Selenium script which utilizes headless Chromium for scraping the UMass course registration portal and deployed it as a Lambda function to be triggered periodically through EventBridge.
- Built the front-end using React and stored user requests in DyanamoDB using a GraphQL API.

Film Recommendation System | Flask, Pickle, Pandas, NumPy

May 2023

- Developed a collaborative filtering based film recommendation system that performs singular value decomposition on a film-rating matrix and calculates cosine similarity to recommend films the user is likely to enjoy.
- Reduced the runtime for future queries from cubic to linear by serializing the decomposed matrix using Pickle.

Game of Altered Life | PyGame, NumPy

Nov 2022

- Devised and implemented a variation of Conway's Game of Life by adding a rule to the cellular automaton that generates Sierpinski triangles from initial configurations that stay static in the original version.