Aashna Gupta

itzaashnagupta@gmail.com | linkedin.com/in/gupta-aashna | aashnagupta.github.io

Education

Purdue University West Lafayette, IN

Bachelor of Science in Computer Science *Aug 2022- May 2026*

concentration in Machine Learning, minor in Business Economics

Relevant Coursework: Data Mining and ML, Analysis of Algorithms, Artificial Intelligence, Computer Systems, Data Structures and Algorithms, Computer Architecture, Programming in C, Java/OOP, Linear Algebra, Data Engineering in Python, Discrete Mathematics, Statistical Theory/Methods, Multivariable Calculus

Technical Skills

Languages: Java, Python, C/C++, C#, HTML/CSS, Assembly x86-64, SQL

Tools/OS: REST APIs, Flask, JUnit, JIRA, Tableau, LangChain, Streamlit, Git, VS Code, IntelliJ, Unity, Blender 3D Modeling, ROS2, Carla, Unreal Engine 4, Ubuntu, Linux, Agile

Libraries: Pandas, NumPy, Matplotlib, Seaborn, OpenCV, TensorFlow, PyTorch, Scikit-learn, Hugging Face Transformers

Experience

Data Engineering Intern May 2024 - August 2024

Workday *Atlanta, GA*

- Consolidated and analyzed data from 200+ programs to generate actionable insights, enabling data-driven decision-making for cross-functional teams and executive leadership.
- Automated data ingestion pipeline using Python and REST APIs, creating 3 custom automations that streamlined processing and reduced manual input errors.
- Constructed and implemented executive dashboards using Tableau, restructuring data source architecture for improved scalability, organization, and accuracy, enhancing visibility into program performance.

AR/VR Research Intern May 2023 - October 2023

UC Berkeley, FHL Vive Center for Enhanced Reality *Berkeley, CA*

- Developed 4 simulation scenarios in CARLA for autonomous vehicle navigation, optimizing testing accuracy for intersection handling, parking, and traffic signals, used by internationally competing AI Racing Tech team
- Modeled and integrated a 3D representation of a go-kart in Blender for use in CARLA, improving usability of simulation and measurement accuracy.
- Improved simulation efficiency by transitioning Unity-based systems to CARLA/Unreal Engine 4 with ROS2, achieving a 6-second lap time reduction in the Robot Open Autonomous Racing simulation.

Researcher at Summer Research Academy June 2021 - July 2021

UC Santa Barbara *Santa Barbara, CA*

- Investigated the impact of VR on human memory as part of the Human-Computer Interaction track, leading experimental trials and presenting findings in a capstone paper.
- Designed and built 9 virtual environments in Unity, leveraging C# scripting to create memory-testing scenarios that measured user retention and engagement across different situations.

Projects

PDF Chatbot | *Python, Streamlit, Hugging Face, FAISS, SentenceTransformer, PyPDF2, Git* January 2025

- Engineered a PDF-based chatbot leveraging FAISS for vector storage and similarity search with embeddings from SentenceTransformer. Integrated Hugging Face FLAN-T5 for sequence-to-sequence natural language processing.
- Developed an interactive Streamlit interface for real-time query handling, incorporating optimized text chunking via RecursiveCharacterTextSplitter to process and retrieve context from large PDF documents efficiently.

Face Recognition App | *Python, Flask, Rest APIs, OpenCV, HTML, Heroku, Git* June 2024 – July 2024

- Built and trained a machine learning-based facial recognition classification model using OpenCV, integrated with a Flask backend and an HTML front end for real-time image and video detection.
- Deployed the application on Heroku, leveraging API integration and optimized preprocessing to ensure high accuracy and responsiveness.

Simple C Compiler | *Assembly x86-64, C* November 2023 – January 2023

- Used knowledge of computer architecture to create a compiler that could parse Simple C code using Lex and Yacc, to generate the Assembly x86-64 code.

E-Commerce Marketplace | *Java, Git, JUnit, IntelliJ* November 2022 – December 2022

- Developed the backend and frontend of a fully functioning multi-threaded online store with a seller side and a buyer side where the users can create accounts and use the respective features (buy product vs create product, etc.)
- Enhanced using filter by description, date, price, etc. options. Includes an easy-to-use GUI and test cases for each function written in JUnit