

Saptarshi De

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EDUCATION

University of Houston

B.S (Honors) in Computer Science, Minor in Math and Finance

Academic Excellence Scholar, Dean's List, Distinguished Scholar's list

Houston, TX

May 2026

Cum GPA – 3.8

TECHNICAL SKILLS

Languages: C/C++, Python, Java, HTML/CSS, JavaScript

Developer Tools: MySQL, R/RStudio, Git, Replit, VS Code

Libraries/Frameworks: TensorFlow, ReactJS, NextJS, NodeJS, Numpy, KerasAPI, pandas, matplotlib

RELEVANT COURSEWORK

- | | | |
|----------------------------------|------------------------|-------------------------------|
| - Data Structures and Algorithms | - Operating Systems | - Database Systems |
| - Machine Learning and DS Math | - Discrete Mathematics | - Statistics for the Sciences |

EXPERIENCE

Software Engineering Fellow

July 2024 - present

Headstarter AI

Houston, TX

- Building **5+ AI apps** and APIs using NextJS, OpenAI, Pinecone, StripeAPI with 98% accuracy as seen by **1000 users**
- Developing projects from design to deployment **leading 4+ engineering fellows** using **MVC design patterns**
- Coached by Amazon, Bloomberg and Capital One engineers on **Agile**, CI/CD, Git and microservice patterns

Data Science Research Assistant

July 2024 - present

Honors College, University of Houston

Houston, TX

- Leading research on **AI-driven video analytics**, leveraging CNNs and deep learning to **enhance real-time object detection** and activity recognition by 30%, with a 20% reduction in false positives.
- Developing advanced machine learning solutions for **automated surveillance**, improving response times by 50% and **minimizing human intervention** for **enhanced security** and efficiency

Undergraduate Teaching Assistant | C++

Jan 2024 - present

CS Department, University of Houston

Houston, TX

- Enhanced student learning by grading and proctoring for Introduction to C++, with **20% improvement** in score
- Conducted weekly office hours, provided personalized assistance to over **200 students**, bettering course reviews
- Facilitated 1-1 and group sessions to guide students on homework, labs, and projects helping over 50 students

PROJECTS

SummarizeTube | Python, Google Gemini, Streamlit

Jul 2024

- Boosted video content summarization efficiency by **70%** by developing an AI-driven YouTube Transcript Converter with **Google Gemini Pro**.
- Orchestrated end-to-end development of **Streamlit app**, optimizing user experience for summarizing transcripts
- Enhanced **productivity** by **50%** through **automated synthesis** of detailed notes from transcripts using Google Gemini Pro

Sign Language Interpreter App | Hackathon Winner | Python, TensorFlow, React.js, JavaScript, HTML/CSS

Feb 2024

- Built an interactive app that captures real-time video and **analyzes** ASL gestures through **TensorFlow** and OpenCV
- Achieved **90% accuracy** and enhanced accessibility for the hard-of-hearing community using ReactJS and Python on a team of 4
- Engineered a robust ML pipeline that included **data preprocessing** and optimization, reducing model training time by **30%**

Zoo Database Project | MySQL, Python, Node.js

Aug 2024

- Designing a MySQL **database** for **managing** animal records, staff, and transactions, increasing query efficiency by 25%
- Building relational schemas to track ticket sales, donations, and sponsorships, **improving** financial reporting **speed by 30%**
- Optimizing queries** and creating stored procedures to generate reports on revenue, visitor metrics, and inventory, reducing report generation time

LEADERSHIP

President

Aug 2024 - present

Cougars in Data Science, University of Houston

Houston, TX

- Organize and host** data science-related workshops in collaboration with faculty for an audience of **70 members** enriching their learning experience and fostering **collaborative learning**
- Enhanced member engagement** by **40%** through company networking events, social events and resume prep sessions