SUBHADEEP JANA

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EDUCATION

Master of Science in Computer Science Aug 2022 - May 2024
Indiana University Bloomington *GPA: 3.87/4.0*

· Coursework: Software Engineering, Applied Algorithms, Applied Machine Learning, Time Series Analysis

Bachelor of Technology in Computer Science Aug 2017 - Jul 2021
Government College of Engg. and Ceramic Technology *CGPA: 9.07/10.0*

· Coursework: Data Structures, Software Development, Artificial Intelligence, Database Management Systems

EXPERIENCE

Research Assistant Feb 2024 - Present
Indiana University *Bloomington*

· Architected a cognitive experiment to study *imminence* and *recency* perception in humans using JavaScript and jsPysch, hosted on Amazon MTurk for data collection. Created custom Flask APIs to store 1000+ trial results in MySQL database.

· Improved trial accuracies by 35% by integrating a balanced probe distribution in the experiment, modifying key timeline parameters and generating real-time accuracy feedbacks at regular intervals.

Software Engineer Oct 2020 - Jun 2022
IXXO Lambda Vision *France (Remote)*

· Developed a ReactJS-based dashboard for a used car marketplace capable of detecting key physical features of a car through *computer vision* and *image processing*, boosting year-over-year site visitors 2x times.

· Engineered a Flask-based backend to serve a YOLOv3 object detection model as a REST API and deployed on AWS EC2. Conducted thorough unit and integration testing using Pytest achieving 75% code coverage.

· Designed an AWS Lambda pipeline on Python to automate feature extraction from 8000+ car images stored in an S3 bucket, ingesting data into a PostgreSQL database for model training and achieving mean Average Precision (mAP) of 0.86.

· Enhanced color detection accuracy by 30% leveraging histogram equalization and color clustering techniques from OpenCV, scikit-image. Collaborated in a cross-functional Agile team of 7 for feature integrations, reducing deployment time by half.

SKILLS

Languages	Python, Java, C++, JavaScript, HTML, CSS, SQL, NoSQL, Bash
Frameworks	Flask, ReactJS, Node.js, OpenCV, Keras, TensorFlow, scikit-learn, pytest, PyMongo, SQLAlchemy, jQuery
Databases	SQLite, MySQL, PostgreSQL, MongoDB, Pinecone
Tools	Git, Jira, VS Code, Jupyter, Eclipse, Postman, PowerBI, Tableau, Docker, Adobe Creative Cloud
Platforms	AWS (EC2, S3, Lambda, DynamoDB), Windows, Linux, Heroku

PROJECTS

Jotter - Full-Stack App using RAG GitHub

· Constructed a ReactJS, Express.js, and Node.js full-stack web app for task management with a PostgreSQL backend, increasing data querying speeds by 17% through B-tree indexing and caching mechanisms.

· Integrated a RAG chatbot working on Mistral-7B LLM using LangChain, PineconeDB, and FAISS indexing to boost usage.

PageTurner Demo

· Directed a team of 4 to build a social media CRUD app with ReactJS and TailwindCSS for frontend, employing a MongoDB database. Integrated Google OAuth and Firebase for user authentication to increase average session duration by 50%.

· Utilized Python, Selenium, and Beautiful Soup to web scrape 2000 images with metadata for database initialization.

Neural Style Transfer (NST) Web Application GitHub

· Created a Flask-based web app for *neural style transfer* to blend images with 8 artistic styles, leveraging PyTorch and OpenCV to load a VGG-19 CNN model with a custom style function for image processing.

· Deployed on Heroku and connected a MongoDB database using PyMongo to accelerate image storage and retrieval by 25%.

CERTIFICATIONS & ACHIEVEMENTS

· AWS Solution Architect Associate *(SAA-C03)* — Badge

· Awarded *$1500* for creating a Streamlit dashboard in IU's CRNY data visualization competition — Article

· *Comparative Study of OpenCV Inpainting Algorithms*, GJCST: Interdisciplinary, Volume 21, Issue 2 — Paper