

Tanay Jain

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EDUCATION

Purdue University

Expected Graduation: May 2027

BS Artificial Intelligence, Computer Science; Minor: Business Economics; GPA: 3.74 West Lafayette, IN

- Coursework: Object Oriented Programming, Data Engineering in Python, Data Science Lab, Data Mining, Computer Vision, AI Basics, Multivariate Calculus, Linear Algebra, Discrete Math, Quantum Computing, VIP

EXPERIENCE

IEEE – ROV (Remotely Operated Underwater Vehicle)

August 2024 – Present

Software Engineer – OpenCV Co-lead

West Lafayette, IN

- Built real-time underwater object detection pipeline achieving **92.6%** accuracy using **OpenCV** and **TensorFlow**
- Engineered **stereo vision algorithm** reducing **depth estimation error** by **18%**, generating **depth maps** and transforming them into **3D point clouds** for precise object reconstruction using **Open3D**
- Created a **360-degree photosphere stitching method** to generate immersive **underwater visualizations**

Boundary RSS

May 2025 – Present

Software Engineer Intern

Remote

- Trained **CNNs** on **5TB+** seismic data to detect hydrocarbon boundaries, raising detection accuracy by **23%**
- Built Python pipeline with **MSNoise**, tomography, and **FWI** to refine subsurface velocity model accuracy
- Applied 3D viscoelastic modeling and Kirchhoff migration, **speeding up depth conversion by 38.8%**

PROJECTS

Solar Score App

July 2024

Back End Software Engineer

Fremont, CA

- Built **microservices** using **FastAPI** to fetch data from **OpenWeather**, **Google Maps**, and **Zillow APIs**
- Developed and designed a **REST API** using **Java** with **Spring Boot** to process data sourced from microservices and developed an algorithm to generate custom solar scores that predict efficacy of solar panels
- Deployed backend to **AWS** using **EC2** and **S3**, enabling scalable cloud access to solar performance data

Diabetes Risk Prediction Research

July 2024 – August 2024

Software Engineer – AI Researcher

Remote

- Sourced diverse patient datasets from **Kaggle**, performing data cleaning and preprocessing to ensure quality
- Trained **Decision Tree J48** and **Random Forest** models conducting **A/B testing** to develop a model detecting early diabetes signs with **96% accuracy**

Automation and Intelligence Construction Lab

January 2025 – May 2025

Research Engineer

West Lafayette, IN

- Fine-tuned **RoBERTa** based model on domain-specific bridge terminology to enhance OCR **accuracy by 18%**
- Built **OCR pipeline** to extract text from scanned PDFs using **OpenCV** and **scikit-image** for preprocessing and **Pytesseract** for text recognition

YouTube Channel

June 2024 – Present

Software Engineer and Content Creator

Fremont, CA

- Created “Modern Vedic Maths” teaching quick mental calculations using Indian Vedic Math principles
- Built a custom analytics dashboard using **JavaScript** with **React** and **Chart.js** for **data visualization**
- Leveraged **Apache Airflow** to orchestrate **ETL** workflows with **Python**, **Pandas**, and **YouTube Data API**

TECHNICAL SKILLS

Programming Languages: C/C++, Java, Python, SQL, C#, TypeScript, Javascript, HTML, CSS

Frameworks & Libraries: AWS, Spring Boot, FastAPI, Flask, Unity, Express.js, Node.js, Nest.js, Next.js, React

Data Science & AI Tools: OpenCV, TensorFlow, PyTorch, scikit-learn, pandas, numpy, SciPy, matplotlib, Weka