

# Arnav Jain

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## EDUCATION

### University of Texas at Dallas

*Bachelor of Science in Computer Science, Minor in Entrepreneurship*

Dallas, TX

May 2027

## SKILLS

**Languages:** Python, Java, JavaScript/TypeScript, SQL, C, C++, HTML/CSS, Bash, Rust, SwiftUI

**Frameworks & Libraries:** React, Node.js, Spring Boot, Bootstrap, Pandas, TensorFlow, PyTorch, Flask, Django

**Tools & Platforms:** Kubernetes, Docker, JIRA, OpenAPI, CI/CD, Figma, Agile, OWASP ZAP, Selenium, Airflow, Git

**Cloud & DB:** IBM Cloud, MongoDB, Cloudant, Supabase, AWS (Lambda, ECS, EC2, S3, DynamoDB, SQS)

**AI:** OpenAI, LangChain, Streamlit, RAG, Transformers (MTSIT, GRU, LSTM), NumPy, Hugging Face, DeepSpeed

## EXPERIENCE

### The University of Texas at Dallas

Oct. 2024 – Present

*Web Specialist @ UT Dallas Department of Strategic Marketing & Communications*

Dallas, TX

- Conducted A/B tests on site hierarchy, microcopy, and CTA placement, reducing bounce rate from 40% to 28%
- Automated data collection for faculty directories and event listings by deploying Python web scrapers with Selenium, cutting manual effort by 90%
- Integrated dynamic alt-text tagging for 100+ images across UTD Engineering sites, improving WCAG 2.1 accessibility compliance for screen reader users

### UT Dallas Association for Computer Machinery

Sep. 2024 – Dec. 2024

*Undergraduate Researcher — Pneumonia Segmentation in Chest X-Rays*

Dallas, TX

- Fine-tuned Meta's (SAM) on labeled outlier regions, boosting mean IoU by 15% on edge cases
- Applied CLAHE and RAPMED to 5K+ chest X-rays, improving pneumonia segmentation precision by 22%
- Preprocessed and normalized 5K+ DICOM images with NumPy and OpenCV, reducing training latency by 35%

### Texas A&M Department of Computer Science

Jan. 2024 – May 2024

*Undergraduate Researcher — Dr. Anthony Medellin, Hyperspectral Algorithms for 3D Mapping*

College Station, TX

- Trained unsupervised autoencoders and DinoV2 models for 3D object tracking on 10K hyperspectral image stacks
- Increased object boundary detection accuracy by 20% using TPR and TNR evaluation on segmented outputs
- Optimized ViT pipeline to handle 200 spectral bands, improving multi-layer object recognition speed by 30%

## PROJECTS

### Verascript | *Ethereum L2, ZKP, SBT, IPFS, Escrow*

Feb. 2026

- Patent Pending:** Filed a provisional patent for a blockchain-integrated prescription verification system designed to eliminate pharmaceutical fraud and data silos.
- Developed a decentralized ledger system using Solidity and Node.js to create immutable audit trails, streamlining provider-to-pharmacy verification[cite: 8, 29].

### Threat Atlas | *Airflow, Docker, Supabase, OWASP ZAP, PostgreSQL, D3.js*

Aug. 2025

- Unified security data into a single dashboard, cutting context-switching time by 45%.
- Automated OWASP ZAP scans with Airflow, reducing manual effort by 70% across 100+ assets.
- Built AI risk scoring that lowered false positives by 35% and improved executive reporting.

### OneFace Dashboard | *AWS (Lambda, DynamoDB, CloudWatch, S3, SQS, Rekognition), Node.js*

Jun. 2025

- Built serverless facial recognition on AWS, processing 100+ scans at 99% accuracy for real-time analysis
- Integrated React UI with AWS Lambda and S3 to enable seamless photo uploads and identity matching, reducing image processing latency to under 2 seconds during live testing
- Designed a fault-tolerant recognition workflow processing over 1,000 facial scans by integrating SQS with event-driven Lambdas and DynamoDB Streams, guaranteeing delivery and consistent state across all user events

### QuillQuest CNN | *Python, NumPy, Pandas, SciPy, scikit-learn, Matplotlib, Jupyter Notebook*

Jul. 2024

- Built a feedforward neural network from scratch in Python using NumPy to classify handwritten digits across 10 output classes, achieving 95% test accuracy
- Implemented one-hot encoding and vectorized  $784 \times m$  matrix ops, cutting training time by 3x over baseline loops
- Designed and visualized the gradient descent learning loop, updating weights and biases via partial derivatives of cost wrt parameters using matrix calculus