

JAIDEEP TRIPURANI

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Work Experience

Research Assistant (Accessibility Analytics) — University of North Texas

Aug 2023 – May 2025

Denton, TX

- ML for Accessibility: Developed and deployed 4+ machine learning models to detect accessibility gaps and forecast student performance, improving intervention targeting by 30%.
- Data Analysis & Visualization: Leveraged Python, SQL, R, and Tableau to clean and analyze datasets from 10,000+ student records, creating interactive dashboards adopted by 3 university departments.
- NLP & Computer Vision: Applied NLP and image recognition techniques to assess digital content, increasing ADA compliance by 25% across 200+ course materials.
- Cross-functional Collaboration: Partnered with the Learning Analytics and Reporting team to align ML outputs with institutional DEI goals, supporting policy enhancements for 5 academic programs.

Software Developer — DWP Global Corp

Jan 2022 – Jul 2023

India

- Full-Stack Development: Developed 3+ scalable web applications using Java, Spring Boot, and React.js, applying SOLID principles and Clean Architecture, leading to 40% reduction in code maintenance overhead.
- Kafka Microservices: Designed and implemented microservices architecture with Apache Kafka, achieving real-time processing with <50 ms latency using idempotent producer-consumer logic.
- CI/CD Automation: Automated CI/CD pipelines via GitLab CI, Docker, and AWS ECS, cutting deployment time by 60% and integrating testing with JUnit, Mockito, and SonarQube (80%+ code coverage).
- Cloud Deployment: Deployed 5+ cloud-native applications on AWS (EC2, ECS, Lambda, S3, RDS, MongoDB Atlas), enforcing secure access via IAM and provisioning infrastructure using Terraform.
- Agile Collaboration: Participated in 10+ Agile sprints, contributing through sprint planning, backlog grooming, TDD practices, and 20+ peer code reviews with 95% acceptance rate.

Web Development Intern — Areksoft Technologies Pvt. Ltd.

May 2021 – Jul 2021

India (Hybrid)

- Built a responsive food recipe website using HTML, CSS, JavaScript, and Bootstrap; implemented advanced filtering, search, and UI features to improve engagement by 20%.
- Collaborated in Git-based workflow to modularize code and deployed interactive recipe steps and validations to enhance user experience.

Academic Projects

Predicting and Improving Online Course Accessibility Using ML

Jan 2024 – Apr 2024

University of North Texas

Denton, TX

- Led a data-driven project to improve accessibility in online courses using Python (pandas, scikit-learn), Tableau, and SQL; built a Random Forest model (87% accuracy) to identify students at risk based on LMS clickstream and content metadata.
- Applied NLP with spaCy and NLTK on 500+ course files (PDF, HTML) to detect missing alt-text, jargon, and readability issues; generated automated dashboards with actionable insights.
- Collaborated with accessibility analysts and instructional designers to prioritize content updates for courses with highest predicted risk.

SkillSync – AI-Powered Course & Mentor Matching Platform

May 2024 – Jul 2024

Personal Project

Denton, TX

- Built an end-to-end matching platform using Java Spring Boot, React.js, and Kafka that recommended mentors to students using skill gap data and behavioral activity logs; Python-based ML model achieved 92% match accuracy.
- Deployed the system on AWS ECS with PostgreSQL and MongoDB; achieved a 40% boost in engagement and 70% reduction in manual pairing through scalable backend APIs and real-time dashboards.
- Integrated user feedback features and improved recommender logic iteratively, enhancing recommendation trustworthiness and experience.

Technical Skills

- **Languages/Frontend:** Java, Python, JavaScript, HTML, CSS, C, C++, SQL
- **Frameworks/Backend:** Spring Boot, Django, REST API, GraphQL, JWT, React.js
- **Tools/DevOps:** Git, Docker, Jenkins, GitLab CI/CD, Terraform, Bash, Shell Scripting
- **Cloud & DB:** AWS (EC2, ECS, Lambda, S3, RDS, IAM), PostgreSQL, MySQL, MongoDB, Oracle, Linux
- **AI/ML:** TensorFlow, Keras, scikit-learn, NLP (spaCy, NLTK), Transformers, GANs, Pandas, NumPy, Seaborn, Matplotlib
- **Other:** Tableau, Microsoft 365, Google Slides, Canva
- **Certifications:** AWS Cloud Practitioner, DevOps Foundations, Python For Everybody, TensorFlow Developer

Education

University of North Texas

M.S. in Computer Science, GPA: 3.71

Denton, TX

Aug 2023 – May 2025