

# KEYUR MODI

San Antonio, TX • 726-205-6201 • modikeyur938@gmail.com • LinkedIn

## EDUCATION

**University of Texas at San Antonio** • San Antonio, TX  
Master of Science in Computer Science • GPA: 4.0 • Expected May 2026  
**Laxmi Institute of Technology** • India  
Bachelor of Engineering in Computer Science • GPA: 3.4 • May 2022

## EXPERIENCE

- Research Assistant & Grader** | University of Texas at San Antonio **Jan 2025 – Present**
- Accelerated billion-scale geospatial similarity queries by 2x leveraging parallel computing, Apache Spark, and GPU-optimized LSH algorithms for NSF-funded research across digital pathology, solar physics, and GIS applications
  - Optimized deep learning training workflows by 25% through TensorFlow, PyTorch, and MLflow implementation, applying transfer learning techniques to process 10M+ polygonal features for tumor diagnosis and skyline.
  - Elevated performance of 120+ students by 15% in Data Science and Operating Systems via Python and ML mentorship while automating grading workflows, cutting evaluation time by 40%
- Software Engineer** | Senmorta Technologies Pvt. Ltd. • India **Aug 2022 – Jun 2024**
- Slashed ETL processing time by 40% by architecting scalable pipelines with Python, Apache Airflow, and Great Expectations to transform 10GB+ datasets for Power BI dashboards and predictive analytics
  - Engineered full-stack web application with React.js, Node.js, Flask, and MongoDB via Docker/Kubernetes that increased user engagement by 35% and decreased bounce rate by 20% across 5K+ users
- Software Engineer Intern** | Adit Microsys Pvt. Ltd. • India **Jan 2022 – Jun 2022**
- Developed responsive web applications with JavaScript, HTML5, CSS3, and MySQL featuring RESTful APIs and MVC architecture, improving performance by 30% and Executed comprehensive QA testing

## PROJECTS

- Geospatial Similarity Detection & Polygon Analysis System**
- Architected neural network-based similarity detection framework achieving 94% accuracy for digital pathology tumor classification and GIS pattern matching by implementing skyline and ridge-line feature extraction with 91% precision, leveraging KNN, CNN, transfer learning, OpenCV, PostGIS, GDAL, and Geopandas on 500K+ annotated samples
- AI Resume Analyzer & Job Matching Platform**
- Built serverless NLP application on AWS Lambda processing 5K+ resumes daily with 96% skill extraction accuracy via BERT and spaCy, cutting screening time by 65%
- Intelligent RAG Chatbot with LLM Integration**
- Engineered retrieval-augmented generation chatbot with LangChain, GPT-4, and ChromaDB achieving 92% accuracy on 10K+ queries through semantic search, FAISS indexing, and prompt engineering
- Reversi AI Game Agent**
- Developed intelligent game agent with Minimax algorithm and Alpha-Beta pruning in Python, outperforming baseline heuristic agents in 80% of test games through optimized position evaluation

## TECHNICAL SKILLS

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| <b>Languages:</b> Python, Java, C++, JavaScript, SQL, R, TypeScript                                | <b>Web/APIs:</b> React.js, Node.js, Flask, Django, FastAPI, REST APIs, GraphQL, Redux  |
| <b>ML/AI:</b> TensorFlow, PyTorch, Scikit-learn, XGBoost, LightGBM, OpenCV, HuggingFace            | <b>Cloud/DevOps:</b> AWS, Azure, Docker, Kubernetes, Jenkins, CI/CD, Git, Terraform    |
| <b>LLM/NLP:</b> LangChain, GPT-4, BERT, RAG, Prompt Engineering, Fine-tuning, spaCy, NLTK          | <b>Databases:</b> MySQL, PostgreSQL, MongoDB, Redis, ChromaDB, FAISS, Vector Databases |
| <b>Data Science:</b> Pandas, NumPy, Matplotlib, Seaborn, Statistical Modeling, Feature Engineering | <b>Tools:</b> Apache Spark, Airflow, MLflow, GDAL, PostGIS, Geopandas, Agile/Scrum     |

## PUBLICATIONS & CERTIFICATIONS

**Research Publication:** "Building Trustworthy Autonomous AI" (LLM ACIG-00029-2025-03)  
AWS Certified Cloud Practitioner • Oracle Generative AI Professional • Oracle Data Science Professional  
Microsoft Power BI Data Analyst • Oracle MySQL Database • Oracle DevOps Professional