

Akshay Kumar Mundrathi

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EDUCATION

Oklahoma State University — Stillwater, OK

Aug 2023 – May 2025

M.S. in Computer Science — GPA: 3.64

National Institute of Technology Warangal — Warangal, India

Aug 2019 – May 2023

B.Tech in Computer Science

EXPERIENCE

Research Assistant — Well-Records Digitization Pipeline

Jul 2025 – Present

Boone Pickens School of Geology, Oklahoma State University — Stillwater, OK

- Inherited a single-document research prototype and engineered a production pipeline (Google Vision OCR, OpenCV, U-Net segmentation) that digitized 570,000+ historical Oklahoma well records, mapping 51,000+ wells across all 77 counties.
- Built a 5-pass coordinate resolver against a 4.5M-cell PostGIS database on AWS RDS and designed a self-correcting public map with an automated GitHub Actions correction pipeline.
- Presented “Automated Extraction of Well Coordinates from Oklahoma 1002A Records” as a poster at the AAPG 4th Annual Orphan, Abandoned, Idle & Marginal Wells Conference (Mar 2026).

Graduate Research & Teaching Assistant

Jan 2025 – May 2025

Oklahoma State University — Stillwater, OK

- Led discussion sections and graded coursework for Discrete Mathematics while completing graduate coursework.
- Gained hands-on experience with core AWS services (EC2, S3, IAM) and cloud lifecycle management best practices.

PROJECTS

Spiking Neural Network — Financial Time Series Classification | GitHub ↗

- Implemented a from-scratch spiking neural network (LIF and Izhikevich neuron models) in Python, encoding S&P 500 index segments as spike trains for biologically-plausible time-series pattern classification.
- Built the full pipeline: permutation-matrix feature encoding, stochastic spike-train generation, a single-layer SNN with lateral inhibition, and confusion-matrix based evaluation.

Modern Data Warehouse & ETL Pipeline (SQL Server) | GitHub ↗

- Architected a Medallion-Architecture (Bronze/Silver/Gold) warehouse integrating 10+ heterogeneous sources, cutting manual data prep time 60% and improving pipeline efficiency 40%.
- Designed Star-Schema dimensional models and Power BI dashboards for cross-functional reporting.

MovieMatch — Full-Stack Recommendation Engine | GitHub ↗

- Built a React + TypeScript frontend backed by a Python Flask REST API, recommending movies from the MovieLens 100K dataset by matching user demographics to similar viewers.

Cricket Analytics — Web Scraping to Power BI | GitHub ↗

- Automated extraction of match statistics via BeautifulSoup/Requests and built a Pandas-based cleaning pipeline, then delivered interactive Power BI dashboards surfacing player and match trends.

Also on GitHub: Cricket Role Clustering ↗ · Graph Convolutional Networks ↗ · Room-Mate Marketplace ↗

TECHNICAL SKILLS

Languages & Scripting: Python, SQL, JavaScript, Bash, PowerShell

Data & Machine Learning: Pandas, NumPy, Scikit-learn, TensorFlow, PyTorch, Power BI, ETL, Data Modeling

Web & Databases: React.js, Node.js, Express.js, FastAPI, MongoDB, SQL Server, PostgreSQL/PostGIS

Cloud & DevOps: AWS (EC2, S3, IAM, RDS), GitHub Actions, CI/CD

PUBLICATIONS & CERTIFICATIONS

- “Improved ANFIS Model Based on Confinement Optimized PSO to Predict the Air Quality of Delhi, India” — IEEE FUZZ 2023 ↗, Incheon, South Korea (presented in person)



- AWS Certified Developer – Associate ↗ | Google Data Analytics Professional Certificate ↗
- Blockchain Specialization, University at Buffalo (SUNY) ↗ | Introduction to Data Science, Cisco ↗
- Technical Support Fundamentals, Google ↗