

PREETHAM DEEKONDA

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SUMMARY

Data & AI Engineer with a Master of Science in Big Data Analytics, specializing in Python-driven AI engineering, applied machine learning, and secure backend architecture. Experienced in building practical, data-driven tools including NLP microservices, workflow automation engines, and computer vision pipelines. Focused on delivering reliable, scalable software solutions for enterprise teams.

SKILLS

- **Languages:** Python, SQL, Java, HTML/CSS, JavaScript, YAML, JSON, XML.
- **Web & Systems:** FastAPI, Flask, Spring Boot, REST APIs, Selenium, Asyncio.
- **Data & Models:** Pandas, NumPy, Hugging Face Transformers, ETL Pipelines, Predictive Modeling, LLM Fine-tuning (LoRA).
- **Cloud & DevOps:** Docker, Kubernetes (EKS, RBAC), MLflow, Git, Wireshark, Linux, SQLite, AWS S3, Lambda, DynamoDB.
- **Power Skills:** Learning agility, AI ethics auditing, stakeholder alignment, complex problem-solving.

EDUCATION

University of Central Missouri, Warrensburg, MO Master of Science in Big Data Analytics & Information Technology | Dec 2025

WORK EXPERIENCE

University of Central Missouri | Warrensburg, MO Machine Learning & Application Lead (Graduate Capstone) | June 2023 – Dec 2025

- Reduced faculty administrative overhead by 40% by building a secure Java Spring Boot application that automated manual quiz grading, quiz generating, and quiz question material organization in question banks.
- Developed a custom ETL pipeline using pdfplumber to extract text and tables from raw PDFs, allowing the system to ingest complex course materials without image noise.
- To solve a primary categorization bottleneck, I engineered a Flask microservice that used TF-IDF vectorization to map bulk-imported questions to textbook chapters automatically.
- Programmed an automated engine that reviews student quiz scores and generates personalized reports pinpointing which chapters a student needs to study again.
- Secured the entire platform and all student data using custom Two-Factor Authentication (2FA) and Spring Security filters.

KEY PROJECTS

Autonomous Workflow Automation Engine (Job Searching) | Python, Nodriver, NumPy, Asyncio | Dec 2025 – Current

- Maintained 80% automation uptime on dynamic React frontends by building a high-concurrency Python engine that handles multi-step tasks.
- To keep sessions active against anti-bot measures, I used NumPy to simulate organic mouse movements based on physics vectors like gravity and friction.
- Further humanized the interaction patterns by using Log-Normal statistical distributions to randomize click delays for long-running background tasks.
- Integrated TLS fingerprinting and strictly typed CSV serialization to ensure data integrity and pipeline security.

Content Recommendation & Clustering Engine | Python, Pandas, Scikit-learn, REST APIs | Oct 2023 – Dec 2023

- Accelerated the editorial publishing lifecycle by 30% by automating news article categorization through a custom Python ETL pipeline and Scikit-learn clustering.
- I built an automated ETL pipeline to ingest daily articles from third-party REST APIs, utilizing Pandas for data cleaning and normalization.

- To increase user engagement, I engineered a recommendation algorithm that maps a user's reading history to specific semantic content clusters.

Real-Time Intrusion Detection Pipeline | Python, OpenCV, Flask, Real-Time Analytics | Feb 2022 to May 2022

- Identified authorized personnel with real-time precision by building a computer vision pipeline in OpenCV utilizing facial recognition algorithms.
- I set up an automated SMTP event-response pipeline that instantly captures and transmits high-resolution evidence snapshots when an anomaly is detected.
- Created a lightweight Flask interface that acts as a remote command center for toggling monitoring states and managing configurations off-site.
- Integrated the hardware and software components to trigger real-time audio-visual alerts based on the vision model's confidence thresholds.