

DEVA SAI KUMAR BHEESETTI

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OBJECTIVE

AI and Machine Learning Engineer with 5 years of combined software development, data automation, and AI engineering experience, including 2+ years of academic research in LLMs, NLP, and Data Science. Skilled in building scalable AI pipelines, fine-tuning transformer-based models, and integrating intelligent automation systems. Adept at designing AI-driven workflows that bridge predictive analytics, decisioning, and automation across healthcare, business, and infrastructure applications.

EDUCATION

University of Massachusetts Lowell, MA

Aug 2023 – Aug 2025

Master of Computer Science

GPA: 3.94

Relevant Coursework: Machine Learning, NLP, Computation in Health and Medicine, Human-AI Interaction

TECHNICAL SKILLS

Programming Languages: Python, R, SQL, Java, JavaScript, Bash, C++ **Data Science & Machine Learning:** Pandas, NumPy, Scikit-learn, PyTorch, TensorFlow, XGBoost, LightGBM, CatBoost, OpenCV, NLTK, SpaCy, Transformers **Data Engineering & Big Data:** PySpark, Hadoop, Airflow, Apache Kafka, AWS Glue, ETL Pipelines, Data Warehousing **Statistical & Predictive Modeling:** Regression, Classification, Clustering, Time-Series Forecasting, Anomaly Detection, A/B Testing, Feature Engineering, Model Evaluation, Cross Validation **Visualization & BI Tools:** Tableau, Power BI, Matplotlib, Seaborn, Plotly, Dash **LLMs & GenAI:** Hugging Face, LangChain, Groq API, DeepSeek, LLaMA, Longformer, OpenAI API, Vector Databases (FAISS, Chroma), RAG Pipelines **Cloud & DevOps:** AWS (S3, EC2, Lambda, SageMaker), Azure, Docker, Kubernetes, Jenkins, Git, CI/CD, REST APIs, FastAPI, Flask **Automation & Scripting:** Google Apps Script, Selenium, BeautifulSoup, Data Automation Pipelines, Web Scraping **Databases:** MySQL, PostgreSQL, Oracle SQL, MongoDB, Firebase **Soft Skills:** Leadership, Communication, Team Collaboration, Agile Development, Mentoring, Problem Solving

EXPERIENCE

Graduate Research Assistant – AI & Healthcare

Jan 2024 – Aug 2025

University of Massachusetts Lowell

- Built biomedical NLP pipeline using transformer models (Clinical Longformer, DeepSeek-R1, LLaMA 3.2) with CORN ordinal heads for SDoH prediction across 15 categories.
- Achieved $92.6\% \pm 1$ accuracy (MAE = 0.235, CEM-ORD = 0.210); implemented active learning and Captum explainability.
- Automated annotation, QA, and benchmarking workflows using PyTorch, Hugging Face, and CUDA; co-authored manuscripts and grant drafts.

Graduate Assistant – Software Development & Data Automation

May 2024 – Aug 2025

Dean's Office, Manning School of Business, UMass Lowell

- Designed and deployed full-stack applications for automating academic and administrative workflows using Python, FastAPI, and Google Apps Script.
- Engineered scalable ETL pipelines to extract, transform, and sync student, event, and LMS data across multiple systems, reducing manual intervention by 70%.
- Built custom dashboards in Tableau and Power BI integrating live Google Sheets and SQL sources to support business and enrollment analytics.
- Fine-tuned BERT-based LLMs for regression and built a GPT-based advising assistant to deliver personalized academic recommendations.

- Created Dockerized scripts and CI/CD workflows for automated testing, grading, and LMS integration across business school systems.

Technology Analyst – Pega Decisioning (Module Lead)

Aug 2022 – Aug 2023

Infosys Ltd. (Client: Verizon), Hyderabad, India

- Led the core Publish Module powering Verizon's Pega Offer Management platform integrating Case, Process, and Marketing systems.
- Designed REST API integrations between ReactJS front-end and Pega Decisioning Hub, enabling real-time offer deployment.
- Built agent-driven automation for offer creation and migration; engineered Kibana utilities to unify API logs improving monitoring.
- Collaborated with senior architects to improve frameworks, debug production outages, and strengthen release automation.
- Mentored four-member onshore/offshore team; promoted twice for ownership and delivery excellence.

Associate Business Analyst – Pega Developer

Aug 2020 – Aug 2022

Infosys Ltd. (Client: Verizon), Hyderabad, India

- Developed and optimized case types, decision tables, and workflow automation using declarative rules, agents, and job schedulers.
- Designed reusable REST/SOAP components for integrations and database synchronization with Oracle SQL Developer.
- Logged API operations via Kibana and improved monitoring aligned with Verizon CDH dashboards.

PROJECTS

Thesis Project – Ordinal SDoMH Prediction with LLMs

Built an end-to-end NLP pipeline on 2,636 opioid-related clinical notes predicting 15 SDoMH categories (0–3 scale). Integrated entropy-based active learning and Captum interpretability; achieved 92.3% ordinal accuracy.

Monitoring Platform for Predictive System Failures

Developed AI-driven AIOps system using LSTM and Prophet to forecast infrastructure failures. Built real-time dashboards (Grafana/Streamlit) integrated with AWS SNS for anomaly alerts.

AI-Powered Code Review Assistant

Fine-tuned CodeLLaMA/DeepSeek-Coder to analyze GitHub PRs, generating actionable feedback via GitHub Actions CI/CD; evaluated comment precision and model alignment.

Personal AI Knowledge Assistant

Built privacy-first assistant indexing PDFs, notes, and emails via LangChain + Chroma + LLaMA 3.2. Deployed Streamlit UI for contextual Q&A and offline inference.

CERTIFICATIONS

IBM Data Science Professional

Google IT Automation with Python

Applied AI: Building NLP Apps with Hugging Face Transformers

Certified Pega Decision Consultant (CPDC), Certified Pega Senior System Architect (CSSA)

LEADERSHIP

Leadership: Mentored engineers, led cross-functional Pega and AI modules, collaborated with clients and research teams.