# Pavan Kartheek Konam

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## PROFESSIONAL SUMMARY

AI Engineer and M.S. candidate in Artificial Intelligence at Northwestern University with a strong background in building multi-agent systems, retrieval-augmented generation pipelines, and applied deep learning solutions. Experienced in LLMs, NLP, computer vision, and MLOps with expertise in developing scalable, production-ready AI systems on cloud platforms. Passionate about saving complex real-world problems in healthcare, human-centered AI, and automation.

## EDUCATION

**Northwestern University, Evanston, Illinois** Anticipated December 2025
*Master of Science in Artificial Intelligence,* **CGPA: 3.84/4**
**TKR College of Engineering and Technology, Hyderabad, India** 2018-2022
*Bachelor of Technology in Electronics and Communication Engineering,* **CGPA**: 8.64/10

## WORK HISTORY

**Graduate Teaching Assistant – Machine Learning** Sep 2025 – Present
***Northwestern University,*** *Evanston, IL*
- Mentoring graduate students in implementing supervised and unsupervised learning models using Python, and TensorFlow.
- Guiding students through end-to-end ML workflow, including feature engineering, model selection, evaluation in project setting.
- Supporting grading, assessment design, and office hours to clarify complex ML algorithms and their real-world applications.

**AI Engineer** July 2025 - Sep 2025
***HauteCarat,*** *Chicago, IL*
- Designed a deployed Intellicore, multi-agent RAG platform integrating 6APIs to deliver unified business insights through NLP.
- Developed Visionary, and internal AI system leveraging GPT-4 Vision and GPT-Image-1 to generate consistent on-model images.
- Automated data ingestion, normalization, and retrieval pipelines to provide real-time analytics and decision-making capabilities.

**Professor (Summer Session) – Linear Algebra & MATLAB** July 2025 - Aug 2025
***Northwestern University,*** *Evanston, IL*
- Delivered an intensive summer course on linear algebra and MATLAB to a cohort of ~30 students, covering vectors, MATLAB.
- Designed hands-on coding labs demonstrating applications of linear algebra in machine learning, engineering, and data science.
- Mentored students on bridging mathematical theory with computational implementation, improving their readiness for AI courses.

**Programmer Analyst – AI/ML** July 2022 - July 2024
***Cognizant,*** *Hyderabad, India*
- Developed deep learning and NLP models for medical imaging, signal analysis, and text classification, improving accuracy by 20%.
- Built healthcare chatbot with 92% response accuracy, enhancing patient interaction automation & clinical decision-making support.
- Led the end-to-end deployment of scalable ML pipelines using MLOps best practices on Azure and AWS, accelerating production.

## PROJECTS

**Empathetic Echoes – Emotion-Aware Psychiatric Chatbot** Apr 2025 – Jun 2025
- Built a conversational AI system capable of detecting emotional tone and responding empathetically for mental health.
- Designed transformer-based emotion classifiers and integrated retrieval-augmented generation to improve contextual response.
- Implemented advanced safety filters that identify crisis-related language and trigger escalation workflows rapidly.
- Validated through iterative blind user testing, achieving high empathy, contextual accuracy, coherence, and conversational quality.

**Gesture Net – Gesture Recognition for Psychological Risk Analysis** Apr 2025 – Jun 2025
- Built a vision-based system for detecting and classifying gestures from video to support intensive psychological risk assessment.
- Utilized pose estimation and deep learning to extract, normalize gesture patterns and normalize complex spatial-temporal signals.
- Built classification pipelines linking gesture dynamics with behavioral indicators, contributing to early risk detection.
- Evaluated the system on annotated datasets and optimized model precision and recall to significantly improve overall reliability.

## LEADERSHIP EXPERIENCE

**Library Committee Advisor – *Northwestern University*** Jan 2025- Jun 2025
- Advised on the digitization and modernization of library resources, improving accessibility and engagement with research materials.
- Collaborated with faculty and administrators to restructure digital content, significantly enhancing resource utilization for students.

**Robotics & IoT Trainer – *Path Creators*** Feb 2019- Feb 2020
- Led workshops and mentorship programs for 600+ students on robotics and IoT fundamentals, fostering strong hand-on tech skills.
- Directed a team of 50+ trainees on project execution, improving build efficiency by 70% and nurturing future innovations.

## COMPUTER SKILLS

- **Languages:** Python, C/C++, R, MATLAB
- **AI & ML:** Deep Learning, LLMs, Generative AI, CNNs, Autoencoders, Transformer Models
- **Systems & MLOps:** Multi-Agent Systems, Retrieval-Augmented Generation (RAG), MLflow, Azure ML, Docker, Kubernetes.
- **NLP & Data:** Feature Engineering, Prompt Engineering, Sentiment Analysis, Knowledge Graphs.
- **Cloud & Infrastructure:** Azure AI Foundry, AWS Sagemaker, SQL, Spark