Nikhil Pavan Kanaka

nikhilpavan.kanaka@gmail.com +1 (813)705-2796 San Francisco, CA
npkanaka.github.io linkedin.com/in/npkanaka github.com/npkanaka

Professional Summary

AI and backend engineer with 4+ years shipping production systems for high-growth AI companies. Building autonomous multi-agent infrastructure for a $12.3M seed startup and advancing open-source frameworks. Graduate NLP research investigated LLM reasoning and generalization.

Industrial Experience

AI Engineer | StackGen San Francisco, CA · Mar 2025 – Present

- Owning agent intelligence and orchestration end to end, covering knowledge layers, tool wiring, planning heuristics, observability, and security for 23+ infrastructure automation agents.
- Engineered DevOps automations blending StackGen's backend primitives with frontier LLM orchestration protocols, moving concepts from design sign-off to production in under a week.
- Evaluated open-source agent stacks against platform requirements, extending or rolling custom frameworks when gaps appeared and upstreaming issues and patches back to the community.
- Drove AI-native roadmap discussions, leading architectural diligence on whether to build or integrate backend components so customer needs turned into shippable agent capabilities fast.

AI Engineer Intern | Ohio State University Columbus, OH · Jan 2024 – Dec 2024

- Prototyped a university-wide AI assistant that let students query course materials, wiring Azure storage and Event Grid triggers into a LangChain based RAG stack with automated refreshes.
- Led a data-migration overhaul for dozens of 12–14M-row tables refreshed daily, cutting ETL runs from six hours to 56 minutes with Airflow MWAA and custom connectorX extensions.
- Built an automated lecture transcription system with speaker diarization to publish transcripts and captions for every recorded class, boosting accessibility on the university's learning platform.

ML Engineer Intern | Wexner Medical Center Columbus, OH · May 2023 – Aug 2023

- Built an LLM-driven data validation system atop greatexpectations.io, auto-generating rules from natural language prompts and eliminating manual rule scripts across hundreds of tables.
- Developed an NLP pipeline to analyze 10K+ patient feedback entries with BERT sentiment, BERTopic clustering, and medspaCy extraction, delivering faster insights to care teams.

Senior Software Engineer | Ninjacart Bengaluru, India · Jun 2022 – Dec 2022

- Led an 8-engineer backend team to onboard 6 strategic partners onto ninjacart.com's B2B platform, shipping integrations that lifted transaction volume 28% within two weeks.
- Automated API schema generation and validation via NLP-driven, rule-based OpenAPI pipelines, replacing manual spec work and speeding backend development cycles.

Software Engineer | Head Digital Works Hyderabad, India · Feb 2020 – Jun 2022

- Co-led backend architecture and engineering for cricket.com and a23.com, covering commerce, engagement, and live operations for 80M+ lifetime users with 250K+ concurrent loads.
- Engineered a fraud platform that blended anomaly detection with rule-based monitoring to track player behavior and boost retention 18%, layering NLP classifiers and retraining loops.

Education

Ohio State University
MS by thesis in Computer Science (NLP) Jan 2023 - Dec 2024

GRIET
Bachelor of Technology in Computer Science and Engineering Oct 2020

Skills

Python • Go • Java • JavaScript • Scala • C++ • SQL • LangChain • CrewAI • LlamaIndex • Google ADK • MCP • A2A • LangFuse • Temporal • Hugging Face Transformers • PyTorch • TensorFlow • Node.js • Express • React • Flask • FastAPI • PostgreSQL • Cassandra • MongoDB • DynamoDB • Elasticsearch • Redis • AWS • Azure • GCP • Docker • Kubernetes • Terraform

Academic Projects

Comparative Investigation of Grokking: A Study on Reasoning, *Mentor: Dr. Sachin Kumar, OSU*
Investigated LLM reasoning by probing parametric memory. [info] [slides]

911AIPredict, *Mentor: Dr. Rajiv Ramnath, OSU*
Built an AI assistant for 911 services that integrates call transcription, fine-tuned LLMs, and a vector database to extract critical details, suggest health conditions, and enhance dispatcher efficiency. *(under review)*

Voicequity, *Mentor: Dr. Srinivasan Parthasarathy, OSU*
Built a metamorphic testing framework that surfaces ASR bias and drives fixes for inclusive voice recognition across global demographics. [report]

Long-Answer Question, *Mentor: Dr. Chris Brew, OSU*
Developed a pipeline using LongFormer attention and generation models to create long-answer questions from academic texts, achieved 42.3% semantic accuracy through evaluation. [report]

HiDL, *Mentor: Dr. DK Panda, OSU*

- Engineered Java bindings for MVAPICH and advanced GPU-accelerated workflows within Nvidia's Spark-Rapids, GDS, and DALI to set new benchmarks in HPC+AI. [info]
- Investigated GPU offloading in Nvidia Rapids. [report]

LogiChain, *OSU*
Developed a system integrating LLMs with symbolic solvers to enhance reasoning by translating natural language into solver-executable code, executing it with symbolic solvers, and feeding results back to the LLM, achieving up to 30% performance gain over LLM-only approaches. [code]

Benchmarking of File Systems, *Mentor: Dr. Ting Zhu, OSU*
Evaluated and optimized file system performance to enhance applicability. [report]

ProdReview, *Amazon Research*
Developed an e-commerce review analysis platform incorporating sentiment analysis and a novel graph-based summarization technique, enabling actionable, product-specific insights. [info]

Service

- Founding member of GRIET's Advanced Academic Center, driving collaborative research. [link]
- Technical Head for Spirals, GRIET's language and literature club. [link]
- Mentored Sahaya Society students to expand tech skills for underserved communities. [link]

Talks

Model Context Protocol — 2025
Enabling intelligent agent communication for infra automation -at- StackGen

Domain-Specific Fine-Tuning — 2023
Advancing analytics in medical research through NLP -at- Wexner Medical Center

Unlocking Meaning — 2022
NLP's role in shaping the future of intelligent systems -at- Ninjacart

Bridging Minds and Machines — 2020
Psychological impact of AI evolution -at- GRIET

Quantum Perspectives on Intelligence — 2020
How quantum reshapes our understanding of intelligence, new possibilities for AI -at- GRIET