

Contact

kvenugop@usc.edu

www.linkedin.com/in/karthik-venugopal (LinkedIn)
karthikvenugopal.github.io/
(Personal)

Top Skills

MuleSoft Anypoint Platform
PySpark
Angular

Languages

English (Native or Bilingual)
Telugu (Limited Working)
Hindi (Full Professional)
French (Elementary)
Kannada (Native or Bilingual)

Certifications

MERN Stack Front To Back: Full Stack React, Redux & Node.js
Neural Networks and Deep Learning
Software Engineering Virtual Experience
AWS Fundamentals: Going Cloud-Native
Machine Learning by Stanford University on Coursera

Honors-Awards

First place in the Valorant Tournament
Second place in the crossword competition

Publications

NFT for Collectibles

Karthik Venugopal

Actively seeking summer internships | MS CS @ USC | Ex-Akamai Software Engineer | AI/ML, Deep Learning & Data Systems | Python, PyTorch, TensorFlow, Spark
Los Angeles Metropolitan Area

Summary

I'm a Master's student in Computer Science at the University of Southern California, passionate about building intelligent, scalable systems that bridge AI research and real-world deployment.

Previously at Akamai Technologies, I developed production-grade systems that reduced data pipeline runtimes by 60% and API latency by 3× through caching and distributed design. My work also included mentoring sessions on FastAPI that were adopted company-wide. Earlier, as a Machine Learning Research Intern at Samsung Research, I improved NLP classification F1-scores by 15% through benchmarking transformer models (sBERT, RoBERTa, etc.).

My recent projects reflect a strong focus on MLOps, generative AI, and multi-agent systems:

Built a LangGraph-powered multi-source research agent with autonomous tool use and vector search (Weaviate), improving research accuracy by 30%.

Designed an end-to-end MLOps pipeline with MLflow, Prefect, and XGBoost for fraud detection (Precision@100 = 0.92).

Created an Artsy web app for artist discovery using React, Node.js, and GCP with sub-300 ms latency.

Applied transfer learning (ResNet50/100, VGG16) for waste image classification with robust AUC/F1 evaluation.

I enjoy working at the intersection of machine learning, system design, and cloud infrastructure, and I'm currently exploring opportunities in AI/ML engineering, applied research, and intelligent systems development.

Experience

Akamai Technologies

2 years 11 months

Software Engineer 2 | PySpark, MuleSoft
September 2024 - December 2024 (4 months)
Bengaluru, Karnataka, India

Spearheaded the integration of PySpark as a scalable data processing platform across the company, enhancing data pipeline efficiency and accessibility for cross-functional teams.

Software Engineer | Fullstack, Python, Flask, FastAPI, React, Node
August 2022 - September 2024 (2 years 2 months)
Bengaluru, Karnataka, India

Improved data retrieval speed in the portal for datacenter technicians by 50%, reducing the retrieval time from 10 seconds to 5 seconds through efficient implementation of caching techniques using Redis.

Built robust REST APIs using FastAPI for retrieving datacenter information, resulting in faster access and seamless integration with the user interface.

Achieved a significant 30% increase in bug reports and feedback submissions by implementing a streamlined communication channel through the email notification system built using internal tools.

Spearheaded a highly successful FastAPI session for over 100 employees, including senior engineers, resulting in significant company-wide adoption and enhanced development efficiency.

Software Engineer | Fullstack, Python, Flask, React, Node
February 2022 - July 2022 (6 months)
Bengaluru, Karnataka, India

Collaborated with an 8-member team to dockerize and optimize the field tech portal for seamless usage by technicians.

Created REST APIs with Flask to streamline data retrieval and integration into the field tech portal.

Enhanced portal efficiency by implementing modular UI components using Ant design for improved usability and maintenance resulting in a 20% reduction in lines of code.

Akamai Technologies

Software Engineer | Fullstack, Python, Flask, React, Node, Perl, PHP

May 2021 - July 2021 (3 months)

Bengaluru, Karnataka, India

Devised a sophisticated Shipping Details Dashboard using React, Redux, and Antd to provide real-time information; optimized shipping operations, resulting in a 30% reduction in shipping-related inquiries.

Overhauled AutoShipNotify which is a tool for logistics people to manage shipment notifications, using Angular, Angular Material, Perl and Flask.

Samsung India

Research and Development Machine Learning Engineer | Machine Learning, Natural Language Processing

October 2020 - March 2021 (6 months)

Bengaluru, Karnataka, India

Engineered and deployed a cutting-edge ML model leveraging top-tier pre-trained models (BERT, ABERT, RoBERTa) to detect out-of-domain text phrases; achieved an exceptional accuracy rate of 96%, significantly improving text classification and data analysis capabilities.

Education

University of Southern California

Master of Science - MS, Computer Science · (January 2025 - December 2026)

B. M. S. College of Engineering

Bachelor of Engineering - BE, Computer Science · (August 2018 - June 2022)

Sri Bhagawan Mahaveer Jain College

Higher secondary school, Physics, Chemistry, Mathematics, Computer Science · (June 2016 - March 2018)

St Francis school ICSE Koramangala

High school, Junior High/Intermediate/Middle School Education and Teaching · (June 2006 - May 2016)