Vidhyakshaya Kannan

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Education

Sai University Sep 2022 – May 2026
B.Tech, Computing and Data Science CGPA: 9.51/10

- Department rank 1
- **Coursework:** Introduction to Programming, Data Structures and Algorithms, Data Analysis and Visualization, Multivariable Calculus, Linear Algebra, Probability and Statistics, Machine Learning, Deep Learning, Artificial Intelligence, Natural Language Processing, Computer Vision

New England College Aug 2024 – Dec 2024
Exchange Student, Computer Information Systems GPA: 4.0/4.0

- **One of five** students from India to be selected to participate in the Global Undergraduate Exchange Program, funded by the U.S. Department of State.
- Awarded **full-ride scholarship worth USD 30,000** to pursue one semester of undergraduate study in Computer Science in the U.S. Scholarship covered visa expenses, round trip airfare, tuition, required fees, on-campus housing, meals, health insurance and a monthly stipend.
- **Coursework:** Object-Oriented Programming, Cybersecurity Foundations

Experience

Research Assistant Atlanta, GA (Remote)
Georgia Tech Financial Services Innovation Lab May 2024 - Present

- **ConfReady: A RAG based Assistant and Dataset for Conference Checklist Responses**
  - Developed *ConfReady*, a pip-installable RAG based tool to assist authors with ARR Responsible NLP Research checklist requirements. Built contextual RAG bakend and performed quantitative analysis on a stratified sample of research papers with checklists, improving accuracy of the tool. Paper accepted to EMNLP 2025 (System Demonstrations Track). Preprint: arXiv:2408.04675
- **KG-QAGen: A Knowledge-Graph-Based Framework for Systematic Question Generation and Long-Context LLM Evaluation**
  - Designed largest publicly available benchmark (20K+ questions) to evaluate long-context language models' ability to retrieve and process information from financial documents.
  - Extracted questions at multiple complexity levels using structured representations of financial agreements. Evaluated 11 LLMs and reported decline in performance with increasing question complexity.

Data Science Intern San Francisco, CA (Remote)
The Gen Academy Oct 2025 - Present

- Conducted research on context engineering, fine-tuning strategies, and multi-agent systems. Contributed to the development of course materials for artificial intelligence workshops.

Undergraduate Student Researcher Chennai, TN
Sai University Aug 2023 - Present

- Designed experiments in Python to investigate auditory temporal attention and its role in enhancing music perception through the synchronization of neural oscillators with rhythmic sequences. Supervised by Dr. Jamshed Bharucha, **Dartmouth College**.

Research Intern Chennai, TN
NetoAI May 2025 - Jul 2025

- Developed T-VEC, the telecommunications industry's first domain-specific embedding model **(20K+ downloads on HuggingFace)**. Fine tuned `gte-Qwen2-1.5B-instruct` using deep triplet loss on 100K domain-specific triplets.
- Paper accepted to EMNLP 2025 (Industry Track). Preprint: arXiv:2504.16460
- Developed an end to end low latency voice to voice agent with streaming ASR, real time TTS and quantized LLMs. Achieved end to end latency of under 0.5s.

Software Developer Intern Chennai, TN (Remote)
NetoAI June 2024 – Sep 2024

- Designed and implemented a network inventory reconciliation application in Spring Boot, enabling alignment between the real-world telecom network state and its digital twin representation.
- Optimized comparison algorithm, reducing reconciliation time by 70% for large-scale network topologies.

Software Engineer Intern Chennai, TN
Prodapt Aug 2022 – Sep 2023

- Contributed to migration of NetBots platform from monolithic to microservices, decomposing services, containerizing with Docker, and orchestrating with Kubernetes.
- Built SpringBoot APIs for NetInsight, network life cycle inventory management tool, used in production by telecom clients.

Awards and Honors

Global UGRAD Scholar Bureau of Educational and Cultural Affairs, U.S Department of State
Invited Member, Young South Asian Leaders Initiative U.S Department of State
Emerging Technologist Millennium Fellow United Nations Academic Impact

Publications

Galarnyk, M.*, Routu, R.*, **Kannan, V.***, Bheda, K., Banerjee, P., Shah, A., and Chava, S. (2025). "**ConfReady: A RAG based Assistant and Dataset for Conference Checklist Responses**." 2025 Conference on Empirical Methods in Natural Language Processing (System Demonstrations Track). Preprint: arXiv:2408.04675

Tatarinov, N., **Kannan, V.***, Srinivasa, H.*, Raj, A., Anand, H. S., Singh, V., Luthra, A., Lade, R., Shah, A., and Chava, S. (2025). "**KG-QAGen: A Knowledge-Graph-Based Framework for Systematic Question Generation and Long-Context LLM Evaluation**." Under review at ARR (Oct 2025). Preprint: arXiv:2506.12345

Ethiraj, V.*, David, A.*, Menon, S.*, Vijay, D.*, and **Kannan, V.***, (2025). "**T-VEC: A Telecom-Specific Vectorization Model with Enhanced Semantic Understanding via Deep Triplet Loss Fine-Tuning**." 2025 Conference on Empirical Methods in Natural Language Processing (Industry Track). Preprint: arXiv:2504.16460

Certifications

Generative AI with Large Language Models *DeepLearning.AI (Coursera)*
Deep Learning *Indian Institute of Technology Madras (NPTEL)* **(top 5%** of the 3779 students certified in the course)
Understanding and Applying Text Embeddings *DeepLearning.AI*
Embedding Models: From Architecture to Implementation *DeepLearning.AI*
Introduction to Discrete Mathematics for Computer Science *University of California, San Diego (Coursera)*
Computer Networks and Internet Protocol *Indian Institute of Technology Kharagpur (NPTEL)* **(top 5%** of the 3082 students certified in the course)

Technical Skills

Languages: Python, C, Java, Julia; **Database:** MySQL, PostgreSQL, Neo4j; **Machine Learning/NLP**: Pandas, NumPy, PyTorch, TensorFlow, scikit-learn, Hugging Face Transformers, LangChain, LlamaIndex, spaCy, NLTK, tokenizers; **Tools/Technologies:** Kubernetes, Docker, Apache Kafka, Git/GitHub; **Frameworks:** Django, FastAPI, Flask, SpringBoot

Positions of Responsibility

Peer Tutor Served as peer tutor for *Introduction to Programming*, *Calculus*, *Data Structures and Algorithms*, and *Introduction to Embedded Systems and Robotics* at Sai University. Mentored 120+ students across four semesters. Designed problem sets and held weekly office hours for course assistance.
President, Computer Science Society Led a 7-member core team to conduct 10+ events, technical workshops, faculty lectures, and coding competitions with 300+ cumulative participants. Partnered with 4+ industry professionals to deliver career talks and hands-on tutorials. Oversaw creation of mentorship programs for first-year CS students.
Secretary of Student Academics, Undergraduate Student Government Elected by the student body to represent 250+ undergraduates. Coordinated with deans and academic departments to optimize timetables for 40+ courses each semester. Organized 6+ academic and professional development events in collaboration with faculty.
Member, Anti-Ragging Committee Drafted and implemented Sai University's anti-ragging policy. Designed a confidential online reporting system used by 300+ students. Conducted sensitization workshops for incoming cohorts and coordinated with administration to ensure compliance with UGC guidelines.

Additional Activities

Reviewer, 19th Conference of the European Chapter of the Association for Computational Linguistics
Panelist, *Computing and Data Science: Societies, Startup and the Future.* One of three students to participate in panel discussion held at Sai University with Prof. John C. Mitchell, Mary and Gordon Crary Family Professor, Professor of Computer Science, **Stanford University**.
Attendee, *NeuroAI 2024: Center for Cognitive Neuroscience Workshop on Neuroscience and Artificial Intelligence.* Attended sessions on neural computations, brain-wide population dynamics, machine learning models of human cognition, and explainable neural networks at **Dartmouth College**.
Speaker, *Containerization in 30 Minutes: From Python to Kubernetes.* Delivered a technical talk on containerizing Python applications and deploying them with Kubernetes.

* Indicates equal contribution.