SRIKHAR PADMANABHAN

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EDUCATION

University of Chicago, Chicago, IL   Sept 2024 – Dec 2025
M.S. in Computer Science (*AI specialization*) — GPA: 3.9/4.0
Selected Coursework: Machine Learning, Advanced Data Analytics, Computational Data Analysis, Generative AI, Distributed Systems

University of Michigan, Ann Arbor, MI**,**   Aug 2019 – Aug 2023
B.S.E. in Computer Science; B.S. in Economics — **Summa Cum Laude**, GPA: 3.8/4.0
Selected Coursework**:** Artificial Intelligence, Computer Vision, Machine Learning, Data Structures, Algorithms

RELEVANT WORK EXPERIENCE

TrueLark (acq by Weave Communications - NYSE: WEAV), Palo Alto, CA — *Software Engineering Intern*   Jun – Sep 2025
- Built and deployed an end-to-end **LLM-powered voice assistant** on Azure using Pipecat Flows, supporting real-time conversational workflows
- Implemented **intent classification and slot-filling** for booking, rescheduling, cancellations, and open-ended Q&A
- Designed **configurable, business-specific logic** for service & appointment selection, enabling reuse across customers
- Benchmarked **OpenAI vs. Gemini** across **200+ production-like** test calls, evaluating latency, response quality, and failure modes
- Reduced end-to-end latency from ~**900ms to ~200ms** under load (10 concurrent calls) by **caching Deepgram TTS audio frames** and LLM responses
- Automated downstream workflows via **SMS triggers** and structured end-of-call payloads consumed by internal systems

Capital One, San Francisco, CA — *Internship* & Associate Software Engineer   Jun – Aug 2022, Aug 2023 – Sep 2024
- Migrated and maintained internal Google Calendar and Zoom **data pipelines** on **Apache Airflow**, enabling reliable daily ingestion for **downstream ML/analytics workflows**
- Built and managed 20+ log ingestion pipelines in **AWS**, centralizing heterogeneous data for analytics and model training
- Implemented **automated data quality checks** in **Snowflake** integrated with New Relic, improving reliability and granularity
- Led compliance initiatives covering **data privacy, secrets management**, and **vulnerability remediation** in production systems
- (Internship) Developed a dashboard to visualize logs, errors, and QA outputs, integrated into QA workflows

TrueLark, Palo Alto, CA — Software Engineer *(remote, part-time)*   May 2020 – Aug 2023
- Developed a **zero-shot FAQ detector** using **TensorFlow Functional API** and a BERT-like architecture for generalizable semantic QA matching
- Designed and implemented a **custom cross-attention mechanism** in Keras, achieving **95% precision and 93% recall** on a holdout benchmark, surpassing SOTA
- Built an automated **Q&A system**: scraped data into **Apache Solr**, retrieved contextual information, and formed LLM-based responses in production
- Integrated ML models into production using **TensorFlow Serving** and **Flask**, streamlining onboarding for new and existing businesses and reducing computing costs
- Implemented a **hierarchical DAG sequence labeler** with contextual attention and dictionary-based lookup, achieving >95% precision, recall, and accuracy
- Drafted **patent documentation** for **three ML architectures** and conducted comparative experiments against SOTA to demonstrate novelty and utility

PATENT APPLICATIONS

- Laxman, S., Mutyala, S., Gowda, H., **Padmanabhan, S.**, Rao, S.
  Attention-Based Deep Neural Architectures for Multi-Point Response Generation in Virtual Business Assistant AI Engines.
  U.S. Patent Application **US-2025-0173733**, published May 29, 2025.
- Laxman, S., Rao, S., **Padmanabhan, S.**
  Hierarchical Structure Learning with Context Attention from Multi-Turn Natural Language Conversations.
  U.S. Patent Application **US-2022-0284171**, published September 8, 2022.

SKILLS

Programming & Scripting: Python, C++, JS/TS, Rust, Golang, MATLAB, R, Octave
ML/AI: TensorFlow/Keras, PyTorch, Deep Learning, NLP, Sequence Models, Convolutional Models, Signal Processing, Algorithms
Cloud & Data: AWS (SQS, Lambda, Kinesis, SNS, EC2, ECS, S3), Snowflake, PostgreSQL, DynamoDB, Jenkins
Web/Frontend: React, Express