Harsh Seth

(413) 466-1609 | hseth@umass.edu
linkedin.com/in/hseth0 | harsh-seth.com

Education

Master of Science in Computer Science, University of Massachusetts Amherst — May 2025
Coursework: Reinforcement Learning, Adv. NLP, Artificial Intelligence, Algorithms for Data Science — *GPA: 3.95*

Bachelor of Technology in Computer Science and Engineering, VIT University — May 2020
Coursework: Image Processing, Content Based Image and Video Retrieval, Machine Learning, Applied Linear Algebra, Discrete Mathematics and Graph Theory, Web Mining, Software Engineering — *GPA: 3.55*

Selected Projects

Generative QA on Traditionally Extractive Tasks *[Skills: NLP, PEFT, Prompt Engineering, Text Generation]*

- Finetuned leading SFT LLMs with PEFT techniques such as **qLORA** to generate answers for RACE, a dataset for extractive QA tasks, and evaluated performance with **LLM generated metrics** via **ICT**

AI Agent for Texas Hold 'em Poker with limits *[Skills: AI, Reinforcement Learning, Game Theory]*

- Trained a **memory efficient** AI agent to play Texas Hold Em' Poker with limits while operating with a hard **sub-100ms decision time limit** to bankrupt unseen opponents in **under 250 rounds** with a **68% winrate**

AI Agent for Warehouses with Movable Obstacles *[Skills: Reinforcement Learning, Simulation, Modelling]*

- Applied Reinforcement Learning with **Eligibility Traces** and other techniques to train an agent to navigate a 2D grid with movable obstacles and efficiently reach a target in **under 200 training iterations**

Industry Experience

PayPal

Software Engineer 2 — Apr 2022 – Jul 2023

- Designed solutions for and implemented E2E a major redesign of PayPal's Billing Agreement Experience which handles **14% of core PayPal TPV across 200 markets globally**
- Proposed and wrote efficient low-level solutions in TypeScript and Java to power **highly distributed, low latency** web services serving **delightful, responsive, and accessible** world-class experiences
- Planned and managed work for a team of 8 engineers as **Scrum Master,** at mean **say-do ratio of 92%**
- Received **Key Talent Award** in the 2023 rewards cycle, and was 3-time winner of a Spot Award
- Trained several cohorts of SDE 1s in Web Development fundamentals and interviewed 35 candidates

Software Engineer 1 — Aug 2020 – Mar 2022

- Conceived and developed a zero-dependency decision engine, reducing **feature development time by 65%** and **total LOC by 80%** on average for onboarded use cases
- Delivered a highly available, distributed cross domain MQ platform powered capable of **processing over 1 billion messages/day** to enable a whole host of new customer facing features across products
- Delivered solutions for various engineering improvements and legacy migration initiatives incorporating several **first-at-PayPal** techniques such as Strangler modules and FlowKeeper
- Organized monthly brownbag sessions and annual hackathons for Commerce Services Engineering

Intern — Jan 2020 – Jul 2020

- Set up a natural language processing pipeline for **automated root cause bucketing and analysis** on customer support call transcripts to better inform Engineering and Operations about emerging issues
- Developed a **natural language aware search engine** and an in-house web crawler with Luscene and beautifulsoup in Python to power a site-wide search with **contextual quick actions**

Intern — May 2019 – Jul 2019

- Delivered solutions for various web experience feature initiatives for Resolution Center Experiences
- **Migrated existing functionality** from legacy RESTful monolithic services to **GraphQL microservices**

Research Experience

Design and Development of an Intelligent On-line Teaching-Learning Portal for Enhanced Problem-Solving & Programming Skills *[PI: Dr Janaki Meena; supported by a MeitY, Government of India grant of ₹15.9M]*

- Investigated feasibility of proposed features for an online programming platform to **enable computer science education** for high schools and universities in underserved regions

A Novel Dynamic Match Scheduling Algorithm for Equitable Queue Generation *[PI: Dr Sivagami M]*

- Demonstrated how fairness (when quantified by specific factors) can be optimized for entities waiting for **access to shared resources** with compatible peers in a **modified M/G/1 queue.** Presented results in a **conference paper** at the International Conference on Mathematical Computer Engineering

Skills

Programming Languages: Python, JavaScript, Java, C, C++, SCSS, Solidity
Libraries/Frameworks: PyTorch, Transformers, ReactJS, GraphQL, ExpressJS, MPI
Tools/Platforms: HuggingFace, Docker, Git, AMQ, Kafka, Kibana, SignalFX, Jira, Figma, tmux, GCP, Unity