Sunnyvale, CA
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Yash Sharma

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Education

Cornell University *Ithaca, NY* **Aug 2022 – May 2024**
MS in **Computer Science** | Minor in **Cognitive Science** GPA: 3.91 / 4
Computational Sustainability, Advanced Language Technologies, Advanced Programming Languages

Indian Institute of Technology Bombay *Mumbai, India* **Aug 2017 – May 2021**
B.Tech in **Computer Science & Engineering** (Honors) | Minor in **Artificial Intelligence** GPA: 9.68 / 10
Deep Learning for NLP, Advanced Machine Learning, Analysis of Concurrent Programs

Software Skills

Systems & Programming | python, C/C++, bash, Rust, Haskell, Java, Javascript, SQL, AVX, Git, Perforce, Docker, KVM
Machine Learning | PyTorch, TensorFlow, TensorRT & onnxruntime

Work Experience

ML Research Engineer, Matic Robots *Mountain View, CA* **Jun 2024 – present**

- Part of the **Neural Networks** team building robust, secure and autonomous **perception and understanding**
- Building, training and evaluating **transformer-based** 3D reconstruction networks that run **real-time** on edge devices

Software Engineer, Samsung Electronics *Suwon, South Korea* **Sep 2021 – Aug 2022**

- Developed high-performance **5G-NR** virtual L1 layer as part of **P**hysical **U**plink **S**hared **Ch**annel team
- Utilized Intel®Intrinsics (**AVX-512**) for efficient parallel processing of data, focusing on cache bottleneck optimization
- Reduced bottlenecks in uplink signal processing pipeline to achieve upto **20% speedup**

Network Engineer Intern, Samsung Electronics *remote* **Jun 2020 – July 2020**

- Built an automated network load testing framework to evaluate performance of in-production load balancing services

Summer Research Intern, TU Braunschweig *Braunschweig, Germany* **May 2019 – July 2019**

- Designed and built **WeLineation**, a full-stack app using **Expectation Maximization** for medical image segmentation

Research Experience

Master's Thesis - Prof. Sanjiban Choudhury *Cornell University* **Feb 2023 – Apr 2024**
- Built a learning system using **Vision-Language transformers** to allow the transfer of human skills to household robots
- Collaborated on a **speech-interactive task planner** for human-robot collaborative cooking, and a web-based evaluator

Undergraduate Research - Prof. Preethi Jyothi *IIT Bombay & Microsoft*
Improving code-switched Automatic Speech Recognition (ASR) using Transformers **Aug 2020 – Jun 2021**
- Built a new bilingual **speech recognition** model conditioned on language using CUDA accelerated dynamic programming
Improving Low Resource Code-switched ASR using Augmented Code-switched TTS **Dec 2019 – Jun 2020**
- Used end-to-end ASR models trained on Hindi and English monolingual corpi and code-switched synthetic data to improve performance in low-resource settings

Publications

- **Demo2Code:** From Summarizing Demonstrations to Synthesizing Code via Extended Chain-of-Thought *[NeurIPS 2023]*
- Improving **low resource code-switched ASR** using augmented code-switched TTS *[INTERSPEECH 2020]*
- **WeLineation:** crowdsourcing delineations for reliable ground truth estimation *[SPIE Medical Imaging 2020]*

Teaching Assistantships

Cornell University
Intro. to Machine Learning *Spring 2024* **Computer System Organization & Programming** *Fall 2022, 2023*
Intro. to Analysis of Algorithm *Summer 2023* **Computational Sustainability** *Spring 2023*
IIT Bombay
Software Systems Lab *Fall 2019, 2020* **Calculus** *Fall 2018*

Key Projects

Psychological analysis of ChatGPT *Prof. Valerie Reyna* **Cornell** **Fall 2023**
Research course exploring decision making of LLMs in risky and ethically ambiguous situations
Modeling misinformation in organizations *Prof. Jon Kleinberg* **Cornell** **Spring 2023**
Formalize the effect of corruption in hierarchical organizations using information networks
Few-shot action recognition on egocentric data *Prof. Kilian Weinberger* **Cornell** **Fall 2022**
Building a two-head action recognition system for EPIC-Kitchens tackling long-tail labels
Morphological Inflection through Deep Learning *Prof. Pushpak Bhattacharyya* **IITB** **2021**
Maze Solving with Evolutionary RL *Prof. S. Kalyanakrishnan* **IITB** **2020**