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YASH SHARMA

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EDUCATION

Cornell University *Ithaca, NY* **Aug 2022 – May 2024**
- **Master of Science** in Computer Science GPA: 4.0 / 4.0, **Minor** in Cognitive Science
- **Graduate courses:** Computational Sustainability, Advanced Topics in ML, Advanced Programming Languages

Indian Institute of Technology Bombay *Mumbai, India* **Aug 2017 – May 2021**
- **Bachelor of Technology** in Computer Science & Engineering with **Honors**, **Minor** in Artificial Intelligence & Data Science
- GPA: 9.68 / 10, Honors GPA: 10 / 10, Minor GPA: 9.4 / 10

WORK EXPERIENCE

Software Engineer, Samsung Electronics *Suwon, South Korea* **Sep 2021 – Aug 2022**
- Key role in developing high-performance, low-latency physical layer for 5G wireless communication as a member of **P**hysical **U**plink **S**hared **Ch**annel team, focusing on core-cycle and cache bottleneck optimization.
- Utilized Intel®Intrinsics (**AVX-512**) for efficient parallel processing of data
- 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 – (ongoing)**
Building perception tools using **vision-language transformer models** to allow transfer of human skills to household robots.
Building a **speech-interactive task planner** for human-robot collaborative cooking, along with a web-based evaluator.

Undergraduate Research - Prof. Preethi Jyothi *IIT Bombay & Microsoft*
Improving code-switched Automatic Speech Recognition using Transformers[1] **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[1] **Dec 2019 – Jun 2020**
Used E2E Automatic Speech Recognition models trained on Hindi and English monolingual data and code-switched Text to Speech (TTS) to improve performance in low-resource settings

R&D Project - Prof. Amitabha Sanyal *IIT Bombay* **Fall 2020**
Implemented an automated debugger for GCC plugin designed to detect bugs in C program translation

TEACHING ASSISTANTSHIPS

CS3410: Computer System Organization & Programming	*Cornell University*	**Fall 2023, Fall 2022**
CS4820: Introduction to Analysis of Algorithms	*Cornell University*	**Summer 2023**
CS2770: Excursions in Computational Sustainability	*Cornell University*	**Spring 2023**
CS251: Software System Lab	*IIT Bombay*	**Fall 2020, Fall 2019**
MA105: Calculus	*IIT Bombay*	**Fall 2018**

Won TA awards for **Fall 2020** and **Fall 2022**

PUBLICATIONS

- **Demo2Code: From Summarizing Demonstrations to Synthesizing Code via Extended Chain-of-Thought** H. Wang, G. Gonzalez, Y. Sharma, S. Choudhury *[NeuRIPS 2023]*
- **Improving low resource code-switched ASR using augmented code-switched TTS** Y. Sharma, B. Abraham, K. Taneja, P. Jyothi *[INTERSPEECH 2020]*
- **WeLineation: crowdsourcing delineations for reliable ground truth estimation** S. Goel[2], Y. Sharma[2], M.L. Jauer, T.M. Deserno *[SPIE Medical Imaging 2020]*

PROGRAMMING LANGUAGES AND SOFTWARES

C/C++, python, bash, JavaScript, Haskell, Java, SQL, PyTorch & TensorFlow, AVX, Git, Perforce, Linux, Docker, MATLAB, node, ExpressJS

KEY PROJECTS

Psychological analysis of ChatGPT in risky decision making; *Prof. Valerie Reyna*; Fall 2023 *Cornell University*
Modeling misinformation in organizations using ; *Prof. Jon Kleinberg*; Spring 2023 *Cornell University*
Few-shot action recognition on egocentric data; *Prof. Kilian Weinberger*; Fall 2022 *Cornell University*
Morphological Inflection through Deep Learning 2021; **Maze Solving with Evolutionary RL** 2020 *IIT Bombay*

[1]Work done as part of collaboration between **Microsoft India Development Center** and **Indian Institute of Technology Bombay**
[2]Equal contribution