Ashutosh **Sathe**

CS master's student @ IIT Bombay

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Education

Graduating Jun 2023 | **Indian Institute of Technology, Bombay** — **Powai, India**
MS by Research in Computer Science & Engineering (CSE) | Grade: 9.86/10

Publications

[ashutoshbsathe.github.io/papers]

[C.1] **Diverse Parallel Data Synthesis for Cross-Database Adaptation of Text-to-SQL Parsers** [| paper]
Abhijeet Awasthi, **Ashutosh Sathe**, Sunita Sarawagi
Conference on Empirical Methods in Natural Language Processing **[EMNLP'22]**

Select Projects

[ashutoshbsathe.github.io/projects]

TestChamber — Course Project: CS748 – Advances in Intelligent and Learning Agents
Advisor: Prof. Shivaram Kalyanakrishnan [</> | code] [| report] [| presentation]

› A Gym environment for training RL agents in the popular physics-based puzzle game Portal 2.

GLO-Caption — Course Project: CS726 – Advanced Machine Learning
Advisor: Prof. Sunita Sarawagi [</> | code] [| report]

› Extended "Generative Latent Optimization" [Bojanowski *et al.*, 2017] framework for image captioning *and* generation.

SwapDragon — Course Project: CS728 – Organization of Web Information
Advisor: Prof. Soumen Chakrabarti [| report]

› Explored non-parametric fusion as an extension of "Dragon" [Yasunaga *et al.*, 2022] framework for KG+LLM pretraining.

scarpet-nn — Personal Project: **125+ stars on GitHub**
Efficient Neural Nets in Minecraft [</> | code] [| docs] [| demo]

› A set of tools to run binarized neural nets in Minecraft. Enables the server admin load a PyTorch model on any server.

yacv — Personal Project: **125+ stars on GitHub**
Yet **A**nother **C**ompiler **V**isualizer [</> | code] [| docs] [| demo]

› A tool for visualizing step-by-step parsing process of typical LL(1) and LR parsers using GraphViz and manim.

Skills

Languages	Python, C++, C, Go, scarpet
Frameworks	PyTorch, HuggingFace Transformers, PyTorch-Geometric, GTK3, OpenGL, JAX (beginner)
Tools	Bash, Git, GraphViz, manim, Blender, LaTeX
Key Courses	Advanced Computer Graphics, Game Theory and Algorithmic Mechanism Design, Learning with Graphs, Combinatorics, Foundations of Verification and Automated Reasoning

Experience

Sep 2020 – Jul 2020 | **Aspect Ratio** — **Pune, India**
Analyst
Worked on COVID-19 modeling with various temporal machine learning models.

Jul 2019 – May 2019 | **Indian Institute of Science, Bangalore** — **Bangalore, India**
Summer Research Intern | Advisor: Prof. R. Venkatesh Babu
Explored a robust preprocessor that attempts to project adversarial examples to a "clean" manifold. This allows for model-free adversarial robustness even in white-box setting. Also studied methods to increase robustness of vision models *without* explicit adversarial training.

Jul 2018 – May 2018 | **Content Team @ IITBombayX** — **Powai, India**
Software Development Intern
Worked on an "XBlock" that allows course editor to put full fledged HTML + CSS + JavaScript content into an OpenEdX course. The XBlock features an HTML editor with autocomplete, autoformatting and live preview.