

Ashutosh Sathe

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EDUCATION

- **Indian Institute of Technology, Bombay** Mumbai, India
Master of Science in Computer Science July 2021 – December 2023(Expected)
- **College of Engineering, Pune** Pune, India
Bachelor of Technology in Computer Engineering; CGPA: 9.1/10 July 2016 – June 2020

EXPERIENCE

- **Aspect Ratio** Pune, India
Analyst July 2020 - September 2020
COVID-19 modeling: Used temporal machine learning methods to model COVID-19 cases in various countries.
- **Indian Institute of Science, Bangalore** Bangalore, India
Summer Research Intern @ Video Analytics Lab May 2019 - July 2019
Transferable adversarial robustness: Explored a robust preprocessing model that removes adversarial noise to get free adversarial robustness for any arbitrary model. **Robustness without adversarial training:** Studied a regularizer that improves robustness against “Spatial Transformation Attacks” without any adversarial training.
- **Indian Institute of Technology, Bombay** Powai, India
Software Development Intern @ Content Team IITBombayX May 2018 - July 2018
Advanced HTML XBlock for Open edX platform: Worked on an “XBlock” that allows the course editor to put full fledged HTML + CSS + JavaScript content into an [Open edX](#) course. The XBlock also features an HTML editor with autocomplete, autoformatting and live preview and takes appropriate steps to properly sandbox the HTML content from interfering with Open edX core components. [\[code\]](#)

PROGRAMMING SKILLS

Python, C++, C, PyTorch, OpenGL, GTK+3, Godot, Unity, Unreal Engine

RESEARCH

- “Diverse Parallel Data Synthesis for Cross-Database Adaptation of Text-to-SQL Models” [EMNLP 2022]
Abhijeet Awasthi, **Ashutosh Sathe**, Sunita Sarawagi

PROJECTS (<https://ashutoshbsathe.github.io/projects/>)

- **TestChamber:** *Course Project (Advances in Intelligent and Learning Agents), Advisor: Prof. Shivaram Kalyanakrishnan:* TestChamber is a Gym environment for training RL agents in the popular physics-based puzzle game Portal 2. The environment can wait for an arbitrary amount of time allowing agent to take as much time as required before choosing next action. Also studied the generalization of an agent trained on one puzzle to a semantically equivalent but slightly longer puzzle. [\[report\]](#) [\[presentation\]](#)
- **GLO-Caption:** *Course Project (Advanced Machine Learning), Advisor: Prof. Sunita Sarawagi:* Extended generative latent optimization [\[Bojanowski et al., 2017\]](#) for image captioning. Obtained the best results on Flickr8K dataset with a ConvNet as an image encoder and GPT-J as a text encoder. We found that our image-text embeddings were far richer when compared to standard end-to-end image captioning models. Due to our flexible problem formulation, the system can also be unintentionally be used as a text-to-image generator. [\[report\]](#)
- **yacv:** [\[125+ stars on GitHub\]](#) Yet Another Compiler Visualizer is a tool for visualizing step-by-step parsing process of typical LL(1) and LR parsers. This python package can be used for visualizing syntaxtree, LR state automaton (using [GraphViz](#)), parsing table and step-by-step parsing process (as a video using [manim](#) or [ManimCE](#)) given a context free grammar and a string. [\[docs\]](#) [\[demo\]](#)
- **scarpet-nn:** [\[125+ stars on GitHub\]](#) A set of tools and libraries to run binarized neural networks in Minecraft. Allows the user to convert PyTorch models into scarpet model. Developed a full neural network API in scarpet (a functional-like programming language that allows running code *in* Minecraft). The API can be executed at either client-side or server-side depending on the configuration which allows for use across wide range of hardware. [\[docs\]](#) [\[demo\]](#)