

# Hrishit Chaudhuri

Email: hrishitchaudhuri@nyu.edu | Web: hrishitchaudhuri.github.io  
Mobile: +91-984-5392-076 | Github: github.com/hrishitchaudhuri

## EDUCATION

- **Courant Institute of Mathematical Sciences, New York University** New York, US  
*Masters in Computer Science (MSCS); GPA: 3.90/4.00* Sep 2023 - Present
- **PES University** Bangalore, India  
*Bachelor of Technology - Computer Science & Engineering; GPA: 9.59/10.00* Aug 2019 - Jun 2023  
*First Class with Hons. Specialization: Systems and Core Computing.*

## EXPERIENCE

- **Qualcomm** Hyderabad  
*Interim Engineering Intern* Jan 2023 - Jun 2023
  - Optimized LLVM-based compilers for proprietary microcontrollers, improving performance against benchmarks by 8-10%.
- **Indian Institute of Science - Programming Languages Lab** Dept of Computer Science & Automation  
*Research Intern* May 2022 - Jul 2022
  - Integrated neural network verifiers into formal verification framework for cyber-physical systems.

## TEACHING

- **NYU Courant** New York City  
*Grader* Jan 2024 - May 2024
  - Grading weekly assignments for course on **Quantum Computing** by Dr Nicholas Spooner.
- **PES University** Bangalore  
*Teaching Assistant* Aug 2022 - Dec 2022
  - Designed course material, assignments, and other preparatory instructions for course on **Advanced Algorithms** by Dr Shobana Padmanabhan.

## TECHNICAL PROJECTS

- **ScriptTONEs: Automated Film Soundtrack Generation** PES University  
*Capstone Project | Guide: Dr Gowri Srinivasa* Jan 2022 - Dec 2022
  - Developed an end-to-end pipeline to generate musical scores for movie scripts based on sentiment conditioning using **variational auto-encoders** and **latent space regularization**.
- **ParCBench: Benchmarking Parallel System Calls to a File System** PES University  
*Course Project | Instructor: Dr KV Subramaniam* Sep 2022 - Nov 2022
  - Extended the **lmbench** suite to provide benchmarking for parallel system calls to a file system.
- **ll-SpMV: Fast Highly Parallel Boolean Sparse Matrix Multiplications with OpenMP** PES University  
*Course Project | Instructor: Dr Sudarshan TSB* Jan 2022 - May 2022
  - Parallelized the **Four Russians' method** for fast matrix multiplication using **OpenMP**, reducing the run-time by 50%, even with varying sparsity.

## READING PROJECTS

- **Systems of Logic for Verification** PES University  
*Independent Study | Guide: Dr Reetinder Sidhu* Apr 2021 - Nov 2021
  - Compiled report on various models of logic used for circuit verification as well as **TLA+**.
  - Identified technical difficulties and limitations in the use of **TLA+** for circuit verification.
- **Boolean Circuit Complexity** Institute of Mathematical Sciences (Remote)  
*Directed Study | Guide: Dr Meena Mahajan* May 2021 - Jul 2021
  - Surveyed graduate-level lecture notes on Boolean circuit complexity, discussing advances including **Sipser, Saxe and Furst's proof of PARITY  $\notin$  AC0**.
  - Assembled notes and summaries to discuss progress at weekly meetings with the guide.

## PUBLICATIONS

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- **ScripTONES: Sentiment-Conditioned Music Generation for Movie Scripts:** Vishruth Veerendranath, Vibha Masti, Utkarsh Gupta, **Hrishit Chaudhuri**, Gowri Srinivasa. Presented at the Machine Learning for Audio workshop @ **NeurIPS '23** and the Generative AI workshop @ **AI-ML Systems '23**.

## SKILLS SUMMARY

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- **Languages:** Python, C, C++, JavaScript, SQL, Java, MATLAB, TLA+, Haskell, Coq
- **Frameworks:** Tensorflow, PyTorch, ERAN, MERN, ROS, OpenMP, CUDA, Pthreads, Lex and Yacc, LLVM, Iris
- **Tools:** Git, GitHub, PostgreSQL, Docker, MongoDB, Neo4j

## ACADEMIC ACHIEVEMENTS

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- Conferred a scholarship to the **Programming Languages Mentoring Workshop (PLMW)** @ the **Symposium on Principles of Programming Languages (POPL) '23**.
- Awarded the **Dr CNR Rao Scholarship, PES University** across three semesters, in recognition of ranking within the top 2% of students in the batch.
- Awarded the **Dr MR Doreswamy Scholarship, PES University** across five semesters, in recognition of ranking within the top 20% of students in the batch.
- Cracked the final round of **Chennai Mathematical Institute's** annual examination in the mathematical sciences, in Computer Science, category B (undergraduate level). - January, 2021

## EXTRA-CURRICULAR ACTIVITIES

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- Qualified for **ACM India's**, in collaboration with the **Chennai Mathematical Institute** and the **Indian Institute of Technology, Madras**, *Winter School on Algorithmic Lower Bounds*, covering topics on fine-grained complexity, between *3rd and 12th January, 2022*.
- Participated in the *International School-conference in Algorithms, Combinatorics, and Complexity*, hosted by the **Department of Mathematics and Computer Science of St Petersburg University** and **Leonhard Euler International Mathematical Institute in Saint Petersburg** between *24th and 28th May, 2021*.
- Reached Stage 2 in *e-Yantra Robotics Competition 2020*, hosted by the **Indian Institute of Technology, Bombay**.
- Senior member and technical staff for **PES Innovation Lab**, PES University's oldest technical club and student-run lab.
- Organized the flagship hackathon **HashCode** for the years 2021 and 2022, and mentored 3 cross-domain projects as part of **PES Innovation Lab**.
- Facilitated the creation of **PES University's** monthly newsletter, **FYI**, serving as **Chief Editor** for a total of 13 editions across 2 years.
- Served as club head for **Write Angle, PES University's** literary club.
- Interested in Western Classical violin and chess at an amateur level.