

Tanmay Sachan

Resume

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Education

- 2018–2023 **Bachelor of Technology and Master of Science**, *Computer Science and Engineering, International Institute of Information Technology, Hyderabad, CGPA 8.46/10.*
- 2018 **Senior Secondary**, *Delhi Public School, Faridabad, Haryana, India 90.8%.*
- 2016 **Higher Secondary**, *Delhi Public School, Faridabad, Haryana, India CGPA 9.8.*

Experience

- May 2019 Spent the summer working with **Xapian**, an open source search engine library under the
- August 2019 **Google Summer of Code** program. Worked on parallelising the library's testsuite and improve I/O profiling.
- August 2019 Working as admin of **Open Source Development Group** of IIIT Hyderabad.
- Present
- May 2020 Research student at **Information Retrieval and Extraction Lab (iREL)** at IIIT Hyderabad.
- Present

Achievements

- 2018 Selected for **ACM-ICPC regionals**, ranking at 128 from over 2000 participating college teams.
- 2018 and Selected for the **training camp for International Olympiad in Informatics**, as a part
- 2017 of top 30 school programmers in India.

Major Projects

- July 2020 Port modules from threejs 3D animation library to **WebAssembly** to improve performance(ongoing).
- July 2020 Write a **JIT compiler** for a model language in **Haskell**.
- May 2020 Write a memory safe **operating system** in **Rust-lang** with support for interrupts, paging and process handling.
- January 2020 Worked on the development of a **chatbot** that helps people with fighting depression for a startup.
- November Modified the **XV6 Operating System**. Added additional helpful system calls, tweaked
- 2019 the scheduler to support various algorithms and benchmark them.
- October 2019 Used metrics like **tf-idf** and the **BM-25** algorithm, to create an efficient program that rates the similarity of two texts of variable lengths for a 24 hour hackathon.
- September Created a **shell**, using C. Handled parsing of complex commands and implemented various
- 2019 custom commands to replicate and extend the behaviour of a standard linux shell.

- September 2019 Programmed an **IOT unit**, consisting of an **ESP-32 microcontroller** and a **pH sensor** and deployed it in hostel overhead water tanks, from where the data is constantly uploaded to an external server where it is monitored.
- March 2019 Worked on **Virtual Labs**, an initiative by the **Government of India** to improve the quality of education in lower tier engineering colleges of India. Added various simulations and illustrations of different computer science algorithms and experiments.

Technical Skills

Languages C, C++, ASM, Rust, Golang, Python, Haskell, JavaScript, Bash
Software Linux/Unix, Git, Jupyter, Vim, Node
Libraries and Frameworks Tensorflow, Pytorch, Numpy, Django, Flask, NLTK, Spacy

Coursework

- Fall 2018 Real Analysis, Computer Programming, Discrete Structures, Digital Systems and Micro-controllers.
- Spring 2019 Introduction to Software Systems, Linear Algebra, Data Structures and Algorithms, Computer Systems Organization, Introduction to IOT.
- Fall 2019 Automata theory, Operating Systems, Embedded Systems, Science, Algorithms Analysis and Design, Data and its Applications, Probability and Statistics.
- Spring 2020 Design and Analysis of Software Systems, Machine Learning, Natural Language Processing, Introduction to Quantum Information and Computation, Software Programming for Performance, Introduction to Information Security.