

Sandhya Saravanan

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📄 sandy9999.github.io

Education

2017–2021 **National Institute of Technology, Tiruchirappalli**

B.TECH COMPUTER SCIENCE

GPA: **8.66**/10

Courses: Cryptography, Data Structures and Algorithms, Database Management, Operating Systems, Networks, Automata and Formal Languages

Experience

2023– **Microsoft Research, Bangalore**

Present RESEARCH FELLOW

Advisors: Dr. Divya Gupta, Dr. Nishanth Chandran

Working on applications of Secure Multiparty Computation (SMPC) to enable privacy preserving machine learning and database operations as a part of **EzPC**, the Cryptography team.

2021–2023 **Microsoft, India**

SOFTWARE DEVELOPER

Backend development of actionable messages and connectors integrated into Outlook and Teams.

Summer 2020 SOFTWARE DEVELOPER INTERN

Built a Power BI dashboard to enable cost optimization on Azure using Azure Databricks.

2020–2021 **Indian Institute of Science, Bangalore**

RESEARCH INTERN, CrIS Lab

Implemented Secure Multiparty Computation (SMPC) protocols from **Astra** in C++ using primitives from **ABY3**. Analyzed and benchmarked custom SMPC friendly sigmoid functions for logistic regression and simple neural networks against **MP-SPDZ**

2018–2021 **Delta Force, NIT Trichy**

CORE MEMBER AND SYSTEM ADMINISTRATOR

Problem setting and platform setup of Applied Cryptography challenges for Capture the Flag contests as a member of the university programming club.

Winter **Indian Institute of Technology, Madras**

2018 RESEARCH INTERN, Biomedical Engineering Lab

Implemented lung field segmentation using Convolution Neural Networks (CNNs).

Publications

- 1 Divyanshu Bhardwaj, Sandhya Saravanan, Nishanth Chandran, Divya Gupta. “**Securely Training Decision Trees Efficiently**”. 31st ACM Conference on Computer and Communications Security (CCS)
[Paper](#) ↗ , [ACM CCS 2024](#)

Honors and Awards

2022 Runner up in **Cloud CTF**, an Azure Cloud ethical hacking contest, Microsoft.

2022 Top 5 in **Contoso Skate and Contoso Financial CTF**, a web hacking contest, Microsoft.

2020 Finalist in **Smart India Hackathon**, a nationwide government-funded hackathon

2018 Top 10 in **InCTF**, India’s first Attack Defence Capture the Flag.

2013–17 Top 250 in India to qualify for **Indian National Olympiad of Informatics (INOI)**.

2016 Top 300 in India to qualify for **Indian National Mathematical Olympiad (INMO)**.

Skills

Python, C++, C#, Javascript

Programming Languages

ASP.NET, React, NodeJS, MongoDB, Django, Flask, MySQL

Development

Linux, Git, Vim, Docker, Visual Studio

Tools and Systems

Extracurricular Activities

- **Women Inclusivity Network**, NIT Trichy: Co-founded a community of female students and alumni of NIT Trichy that aims to improve the representation of women in STEM fields.
- **Teach for India**: As a volunteer, developed workgen.org, an educational tool to automate question paper generation, with the goal of minimizing the gap in quality of teachers between cities and rural areas.
- Actively contributed to promoting coding culture on-campus by organizing hackathons, CTFs, programming contests and workshops for the student community as a member of Delta Force, NIT Trichy.
- Actively promoted events across music, arts, English lits and dramatics clusters for the annual cultural fest of NIT Trichy.
- Trained in Carnatic music vocals and Western keyboard.