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-Present | **Microsoft Research, Bangalore**
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 2018 | **Indian Institute of Technology, Madras**
Research Intern, Biomedical Engineering Lab
Implemented lung field segmentation using Convolution Neural Networks (CNNs).

Publications

1. Divyanshu Bhardwaj, <u>Sandhya Saravanan</u>, Nishanth Chandran, Divya Gupta. "**Securely Training Decision Trees Efficiently**". To appear in 31th 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.