

# Rishit Saiya

rishitsaiya@gmail.com | USC

## EDUCATION

### UNIVERSITY OF SOUTHERN CALIFORNIA (USC)

MS IN CYBER SECURITY

Aug 2022 - Apr 2024

### INDIAN INSTITUTE OF TECHNOLOGY (IIT), DHARWAD

B.TECH IN COMPUTER SCIENCE

Aug 2018 - Apr 2022

CGPA: 8.94/ 10

## LINKS

Homepage: [rishitsaiya.github.io](https://rishitsaiya.github.io)

Github: [rishitsaiya](https://github.com/rishitsaiya)

LinkedIn: [rishitsaiya](https://www.linkedin.com/in/rishitsaiya)

CTFlearn: [pr0ctf](https://ctflearn.com/pr0ctf)

TryHackMe: [rishitsaiya](https://tryhackme.com/members/rishitsaiya)

## SKILLS

### LANGUAGES

- C/C++ • Python • HTML

### FRAMEWORKS AND TECHNOLOGIES

- Bash • ~~TeX~~ • Nano • Nmap • Git
- Burpsuite • Django • Linux

## INTERESTS

- CTF • Embedded Security
- Red Teaming • Bug Bounty
- Risk & Compliance • Pen-Testing

## RESPONSIBILITIES

Academic Student Mentor

[SMP, IIT DHARWAD](#)

(2019 - 2022)

- Served as a proactive academic student mentor and helping juniors academically and in careers
- Check Certificate [HERE](#)

Technical & PR Team

[CDC, IIT DHARWAD](#)

(Aug 2020 - Aug 2021)

- Leading point of contact to link major organizations & CDC for internships and placements
- Check Letter [HERE](#)

## EXPERIENCE

### CYBER SECURITY INTERN | [TOSHIBA](#)

Oct 2021 - June 2022

- Integration of Security standards IEC 62351, IEC 61850 to ICS products.
- IED Development involving security standards like TLS, OCSP, LDAP, X509 Certificates and communication with RBAC servers and HMI systems.
- Worked on a secured C Plugin compatible for a cross platform array of embedded devices over an automated substation.
- Check out: [EXPERIENCE LETTER](#)

### SDE INTERN | [LG SOFT INDIA](#)

Aug 2021 - Dec 2021

- Worked and designed an Ethereum based User Authenticated distributed ledger which is a highly flexible blockchain architecture with great transaction performance on Web OS based devices.
- Check out: [EXPERIENCE LETTER](#)

### RED TEAM INTERN | [CYBER SAPIENS UNITED LLC](#)

Dec 2020 - June 2021

- Red Team Assessment, Realistic Attack scenarios using tactics, techniques, and procedures seen in real-world attacks
- Tailored engagements to meet organizational needs, with objectives based on the most relevant risks to organization
- Detailed, concise reports with actionable recommendations to aid in remediating identified issues post-engagement.
- Assessments performed for clients like Hangyo Ice Creams, Indian Institute of Science [IISc] (Institute of Eminence)
- Check out: [EXPERIENCE LETTER](#)

### SUMMER INTERN TRAINEE | [BioTELEMETRY INC, PA, USA](#)

May 2019 - Jun 2019

- Evolution of Cyber Security Landscape, Information Security Standards
- Networking TCP/IP Fundamentals, Risk Management Mitigation in Information Security Compliance
- Check out: [RECOMMENDATION LETTER](#)

## PROJECTS

### SECURING NEURAL NETWORKS AGAINST HARDWARE TROJANS THROUGH ASSISTED PARALLELIZATION

EMBEDDED SECURITY | NEURAL NETWORKS | LINEAR PROGRAMMING

- This research proposes a novel technique to employ low-performance, but trusted home-grown cores to verify the functioning of high-performance, untrusted, third-party cores.
- The technique created by us caters to the execution of neural network applications, and ensures fast, yet trusted execution of the same using assisted parallelization.
- Concepts used: Approximate Computing, Neural Networks, Embedded Security, HGC (Home Grown Core), 3PC (3<sup>rd</sup> Party Core), Linear Programming, PyTorch Framework

### Contingent Coordinator [INTER IIT TECH MEET, 8.0](#)

(Jun 2019 - Dec 2019)

- Optimizing the resources & chalked out plans in order to participate to more events with minimal squad
- Assessing freshmen teams' reports, synopsis and submissions for the events

### Sponsorship Lead [PARSEC, IIT DHARWAD](#)

(Nov 2019 - Feb 2020)

- Devised strategies & overcame budgets constraints & targets
- Achieved so by collaborating with industry giants likes of GitHub, Matic, StickerMule, Wolfram, Devfolio
- Check Certificate [HERE](#)

### Class Representative [IIT DHARWAD](#)

(Aug 2019 - April 2020)

- Acted as a prime media between professor and rest of the class, for all monitoring formalities and academic activities
- Check Certificate [HERE](#)

## CERTIFICATIONS

- Fortinet - [NSE-1, NSE-2](#)
- GCP - [GOOGLE CLOUD ESSENTIALS](#)
- Stanford University - [MACHINE LEARNING](#)

## KEY CORE COURSES

Computer Networks  
Computer Organization  
Operating Systems  
Pattern Recognition & Machine Learning

## EXTRA CURRICULAR

### Football Captain

- Captained CSE Dept Football Team and finished Runner Ups [HERE](#)

### CTF Lecture

- Delivered lectures as a part of Technical Council, IIT-Dh to encourage students to enter the field of Cybersecurity. [HERE](#)

## FAKE PACKET GENERATION, DETECTION ITS ANALYSIS USING NETWORK SECURITY | NETWORK SECURITY

- This research work illustrates the generation of fake packets distinct from general conventional network traffic and their detection using tools like Scapy, Snort, and simulation of an IDS.
- It caters to the execution of Payload and its real-time analytical understanding based on MITM attack and its illustration using Scapy, Wireshark Snort, thus utilizing the network analysis techniques.
- Port Security strategies to mitigate the most-vulnerable threats are also defined, possible DNA cryptographic techniques, and state-of-the-art Quantum Cryptography is also explored comprehensively.
- Paper accepted and **published at 7th International Conference for Convergence in Technology, IEEE Bombay, I2CT**. Check out IEEE Xplore link [HERE](#)

## ASSEMBLY BCD PACKAGING | COMPUTER ARCHITECTURE, KEIL EMULATOR | [CODE](#)

- As a part of Computer Architecture Course Project, our team had to procure simulation of packing BCD Numbers on NXP's ARM Cortex M3-LPC1768.
- Using Keil's Emulator to simulate this process, we produced packing of BCD numbers with and without usage of THUMB instructions and analyzed computation times, ops required as per instructions.

## AWARDS & ACHIEVEMENTS

### CSAW - EMBEDDED SECURITY CHALLENGE | [CREDENTIAL](#)

- Penetrated into the HiFive1 revB IoT board by exploiting the WiFi Access Point firmware corresponding firmware binary running on a RISC-V based architecture on IoT platform using OSINT other Open Source RE tools like Ghidra.
- Our team **TheHackingCompany** secured **2<sup>nd</sup> Runner Up** Position in **CSAW 2020, India Region**. Check out final paper [HERE](#)

### CTFLEARN | [PROFILE](#)

- I am current running at **Top 100 Global Rank** out of more than **80,000 users** using the platform globally.
- All the writeups to those challenges (which has around 500-1000 weekly views) are maintained at my [BLOG](#)

### BYTECTF - 2020 | [CREDENTIAL](#)

- I secured **9<sup>th</sup> Global Rank** out of around **160 participating teams** in ByteCTF 2020.
- Check out my writeups [HERE](#)

### D.R.D.O. SASE'S UAV FLEET CHALLENGE

- Built UAV Drone Swarm to spot a target amongst a clutter of different objects spread randomly over a grassy land and subsequently communicate the location of the target to their remaining two drones using swarm technology only.
- Our team secured **4<sup>th</sup> position** among other 18 participating IIT teams.
- Check out: [CERTIFICATE](#)