

# Satvik Vemuganti

CS Undergrad | B.Tech Hons. in CSE, IIT Bhilai

 vsatvik.in  VickyMerzOwn  satvik-vemuganti  vemugantissha  7013962027

## ABOUT ME

I'm a 3<sup>rd</sup> year Computer Science Undergrad at IIT Bhilai. I enjoy picking up new skills and love experimenting with software tools and technologies. I am currently involved in networking research, studying routing in LEO Satellite Networks. I partake in CTF contests, which have led me to develop a keen interest in cybersecurity and cryptography. Outside of my academics, I enjoy reading books and writing blogs.

## WORK

### SOFTWARE HERITAGE

| INTERN | GSOC 2022

Jun 2022 – Aug 2022

Built metadata indexers for SWHs archived content

Mentors: Dr. Stefano Zacchiroli, Valentin Lorentz and Kumar Shivendu

### IIT BHU

| RESEARCH INTERN

May 2022 – Jul 2022

Worked on android malware detection using Deep Learning, advised by Dr. Mayank Swarnkar

### IIT DELHI

| RESEARCH INTERN

March 2022 – May 2022

Studied the issue of location privacy of UASs, advised by Dr. Dhiman Saha.

## ONGOING RESEARCH

### ROUTING IN LEO SATELLITE NETWORKS

AS PART OF THE COURSE IN ADVANCED COMPUTER NETWORKS

- Identified the vacancy of a specialized end-to-end routing protocol for satellite networks offering internet transit
- Working on developing a foolproof mechanism for intra-domain and inter-domain routing on the premise of predictability of the network topology

## PAST STUDIES

### BOTNET DETECTION BY RANDOMWALK-PAGERANK

RESEARCH INTERNSHIP AT INDIAN INSTITUTE OF TECHNOLOGY VARANASI (BHU)

- Implemented a PageRank algorithm tailored for Botnet detection by associating nodes with random walks
- Performed analysis using centroid-based, distribution-based, hierarchical-based and density based clustering techniques

### VERACITY OF LOCATION INFORMATION IN UAV SYSTEMS

RESEARCH INTERNSHIP AT INDIAN INSTITUTE OF TECHNOLOGY DELHI

- Studied topics ranging from privacy preserving proximity testing to information leakage from Location based services

## SKILLS

### PROGRAMMING

Proficient:

Python

Experienced:

Flutter • C

Familiar:

Shell • Vim • JavaScript • C++

### TOOLS/PLATFORMS

Git • Jenkins • Docker

## EDUCATION

### IIT BHILAI

BACHELOR'S IN COMPUTER SCIENCE

November 2020 - Present | Raipur, India

Department of EECS

Cum. GPA: 9.16

## ACTIVITY

### OPENLAKE

| COORDINATOR & MENTOR

May 2022 – Present

The club building FOSS @ Bhilai

### DE.CI.PHE.RED LABS |

RESEARCHER

Feb 2022 – Present

Crypto Lab @ IIT Bhilai

### DEVELOPER STUDENT

#### CLUBS

| CORE MEMBER

Jan 2022 – July 2022

The Google Developer's Club, IIT Bhilai

### TINKERING LAB | FOUNDING

CORE ADVISOR

Jul 2021 – Present

Student Run Tinkerers Lab @ IIT Bhilai

### DUGC, IIT BHILAI | STUDENT

REPRESENTATIVE

May 2022 – Present

UG Student Representative for Dept. of

EECS @ IIT Bhilai

## PROJECTS

### EVM MANAGEMENT SYSTEM (EMS2.0) | PYTHON FASTAPI

- Was a founding manager in the startup contracted by the Election Commission of India to build an Electronic Voting Machine Management System (EMS2.0)
- Worked closely on design and secure implementation of the User management module of the project
- Was involved in the design of a simple and efficient permission management system for the above module

### MINE INFORMATION FROM ARCHIVED CONTENT | PYTHON

- I worked on adding mappings to Packagist (composer.json), NuGet (.nuspec), and dart (pubspec.yaml) packages.
- Additionally, I am currently working on a mapping for Cocoapods (.podspec) packages.
- Please find all my contributions [here](#).

### LINUX SHELL | C

- Built for Assignment 2 of CS250 (Operating Systems) at IIT Bhilai, 2021-22/W Semester taught by Dr. Anand Baswade.
- Shell supports redirection, piping and conditional execution.

### CS553-CRYPTOGRAPHY | PYTHON, CARBON (EXPERIMENTAL, NOT PUBLISHED)

Code written for coursework and assignments of CS553-Cryptography by Dr. Dhiman Saha at IIT Bhilai.

- Stood first, among 20 groups, in the course-CTF which revealed both assignments so far given in the course
- Designed and implemented a toy cipher with a random S-box
- Performed differential cryptanalysis on the above cipher and ciphers discussed in class
- Used Gurobi MILP Optimizer to find the best possible 4-round trail for the above cipher

### V-AI-DYA | DJANGO

- AI voice based health assistant. (Vaidya is a practitioner of Ayurvedic Medicine)
- Global top 50 submission. [Certificate here](#)

### TO-DO LIST APP | FLUTTER

Android and iOS

- Built an interactive cross platform application to track tasks and goals, using Flutter
- Employed widgets offered by Flutter for a clean and efficient UI.

## COURSES

### CS100, CS200

SOFTWARE TOOLS & TECHNOLOGIES

### CS250

OPERATING SYSTEMS

### CS553

CRYPTOGRAPHY

### CS301

COMPUTER NETWORKS

### CS502

GRAPH THEORY & APPLICATIONS

## ONGOING COURSES

### CS503

LIGHTWEIGHT CRYPTOGRAPHY

### EE605

ADVANCED COMPUTER NETWORKS

### CS608

ADVANCED GRAPH ALGORITHMS

## VOLUNTEERING

### STUDENT MENTORSHIP PROGRAMME

| MENTOR

IIT Bhilai

Jun 2021 – May 2022

Student mentor to 7 undergraduate students at IIT Bhilai

### CLASS REPRESENTATIVE

| CS, BATCH OF '24

IIT Bhilai

Oct 2020 – Present

Student representative for academic issues for branch of computer science, batch of 2024.

### INSTITUTE INNOVATION COUNCIL

| COORDINATOR

Sept 2022 – Present

| VOLUNTEER

Jul 2021 – Jun 2022

Clubs set up as part of network of Ministry of Education's Innovation Cell

### STUDENT ALUMNI CELL

| VOLUNTEER

Dec 2020 – Jan 2021

First tenure of the cell to foster university-alumni relations

### FOSS OVERFLOW

| OSS INTERN

Jan 2022 – Feb 2022

Built a mobile version of Activity tracker mobile app. Find blog here!