

Priya Govindasamy

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EDUCATION

University of California, Irvine

Ph.D. in Computer Science GPA: 4.0 (3 quarters)

Irvine, California, USA

September 2023-Present

Vellore Institute of Technology

Bachelor of Technology in Computer Science & Engineering CGPA: **9.59/10.0** (6 semesters)

Vellore, Tamil Nadu, India

June 2019–Present

Relevant Courses: Data Structures & Algorithms, Operating Systems, Cybersecurity, and Machine Learning

Kendriya Vidyalaya, Indian Institute of Science Bengaluru, Karnataka, India

Grade XII **96.2%** in English, Maths, Physics, Chemistry, Computer Science

May 2019

Grade X **10** CGPA in English, Sanskrit, Maths, Science, and Social Science

May 2017

RESEARCH EXPERIENCE

University of California, Irvine

Irvine, California, USA

Ph.D. in Computer Science program at University of California, Irvine

September 2024– Present

- *Project – Spinner: Identifying Locking Violations in the eBPF subsystem*
- *Advisor – Prof. Ardalan Amiri Sani*
- Performed analysis to determine the execution context of helper functions and kfuncs used in the eBPF subsystem. Designed and implemented a tool that uses static analysis to identify nested locking violations and check whether spinlocks are used in the correct execution context in the eBPF subsystem. Identified 28 bugs in eBPF helper functions.

University of California, Irvine

Irvine, California, USA

REU program at University of California, Irvine

June 2022 – August 2022

- *Project – Two factor authentication and localization scheme for autonomous vehicles*
- *Supervisors – Prof. Marco Levorato, Anas Tarik M*
- Provided an implementation of a theoretical concept to improve security in autonomous vehicles. Built a test bed using raspberry pi that uses an LED to send messages in binary. Wrote a python program using computer vision algorithms to perform detection and tracking of an LED that sends a message in binary.

WORK EXPERIENCE

Graduate Student Researcher at the University of California, Irvine

Irvine, California, USA

- *Supervisor – Prof. Ardalan Amiri Sani*

September 2024 - Present

Teaching Assistant at the University of California, Irvine

Irvine, California, USA

- *Supervisor – Prof. Thomas Yeh*
Course – ICS 31 (Introduction to Programming)
- *Supervisor – Prof. Ardalan Amiri Sani*
Course – COMPSCI 143A (Principles of Operating Systems)

September 2023 -December 2023

January 2024 – March 2024

Intern at All-e-Tech

Pune, Maharashtra, India

Software Engineering Internship at All-e-Tech

May 2021 – July 2021

- *Project – Simulation of Deployment of Unified Threat Management in a company environment.*
- *Supervisor – Mr. Rajan Gaba*
- Assisted in installing and configuring Microsoft Bitlocker Administration Monitoring (MBAM) software. The deployment of this software was simulated on both server and client computers.

RELEVANT PROJECTS

University of California, Irvine

Irvine, California, USA

March 2024 – May 2024

- *Project - Hardware-Based Control Flow Integrity Checking for Embedded Devices*
- *Supervisor – Prof. Alfred Chen*
- Creation of a low-cost, high-performance, hardware-based CFI checking solution using the ORBTrace mini and Nucleo-H563Z. Uses static and dynamic analysis to identify valid control flow targets and verifies them at runtime.

Vellore Institute of Technology

Vellore, Tamil Nadu, India

Capstone Project

December 2022 – May 2023

- *Project - Prevention of Railway Accidents Caused by Animals Using Ensemble Learning*
- *Supervisor - Prof. Narayanamoorthi M*
- Trained an AI model using SSD_mobilenet v2 to detect animals when they are present near railway tracks from captured videos. This can be used to send alerts to trains or respective authorities which may help to reduce train accidents.

Network Security

- *Project - Intrusion detection system using federated machine learning*
- *Supervisor – Prof. G.M. Karthik*
- Created a scalable and privacy-preserving ML model using the Federated Averaging (FedAvg) algorithm to detect network intrusions. Implemented virtual machines using pytorch-hook to train data in a decentralized environment, sending only model parameters from local nodes to the aggregate server.

Operating Systems

July 2020 – December 2020

- *Project – Study of File Systems*
- *Supervisor – Prof. Jothi K.R.*
- Tabular comparison of different file systems used in Windows and Linux. Comparative study of three file allocation methods. C program to show the implementation of a file system.

Cybersecurity

December 2021 – May 2022

- *Project – Operating System Malware Detection*
- *Supervisor – Prof. Rajesekhara Babu*
- Used machine learning models such as naive Bayes, random forest, gradient boosting, AdaBoost, and decision tree to determine whether a particular file is malware.

Web application development using MERN stack

July 2021

- *Project – Simple notes application that allows user to create, view, edit and delete notes*

TECHNICAL SKILLS

Programming Languages: C, C++, Python, Java

Front-end Software Development: HTML, CSS, vanilla JavaScript

Others: eBPF program development, Operating System development, Machine learning, MATLAB, SQL, Bash, PHP, embedded system development for Raspberry Pi and Arduino

ACHIEVEMENTS

- One of the top 10 students out of 2000 students in computer science and engineering in VIT.
- Program Representative for the CSE branch during the year 2021-2022 year due to excellent academic achievements.
- Recipient of the merit scholarship from VIT during the years 2019-2020 and 2020-2021
- Ranked in the top 1.5% of all India Kendriya Vidyalaya candidates in 12th Central board examinations. Ranked 1st at the school level.
- Qualified for 2nd level National Science Olympiad (NSO) and International Mathematics Olympiad (IMO). (2016)
- Performed Social Service in association with 'HelpAge India' and 'The Desi Cows for Better India Trust'.
- Part of the Green Ambassador project by Schneider Electric.
- Member of LEO club in affiliation with Lions club. (2019-present)
- School first in International English Olympiad. (IEO) (2010)