Priya Govindasamy

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EDUCATION

University of California, Irvine — Irvine, California, USA
Ph.D. in Computer Science GPA: 4.0 (3 quarters) — September 2023-Present

Vellore Institute of Technology — Vellore, Tamil Nadu, India
Bachelor of Technology in Computer Science & Engineering CGPA: **9.59/10.0** (6 semesters) — 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* — September 2023 -December 2023
  Course – ICS 31 (Introduction to Programming)
- *Supervisor – Prof. Ardalan Amiri Sani* — January 2024 – March 2024
  Course – COMPSCI 143A (Principles of Operating Systems)

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
Computer System Security 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 July 2022 – December 2022

- *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)
- Part of the Green Ambassador project by Schneider Electric.
- Member of LEO club in affiliation with Lions club. (2019-2023).