Priya Govindasamy

priya.govindasamy@gmail.com | +1 9494802155 | [LinkedIn](#)

EDUCATION

University of California, Irvine   Irvine, California, USA
Ph.D. in Computer Science   GPA: 3.957 (6 quarters)   September 2023 - Present

Vellore Institute of Technology   Vellore, Tamil Nadu, India
Bachelor of Technology in Computer Science & Engineering   CGPA: 9.59/10.0   June 2019 - May 2023
Relevant Courses: Data Structures & Algorithms, Operating Systems, Cybersecurity, 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 the University of California, Irvine   Sept 2024 - Present
(Advisor: Prof. Ardalan Amiri Sani)

- **Spinner: Identifying Locking Violations in the eBPF Subsystem**   Sept 2024 - Nov 2025
- Performed analysis to determine the execution context of helper functions and kfuncs used in the eBPF subsystem. Designed and implemented a tool called Spinner 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 34 bugs in eBPF helper functions. Many of these bugs have been reported to the Linux kernel community and these reports have informed the development of patches to prevent such bugs.

- **DARPA CPM (Compartmentalization and Privilege Management)**   April 2025 - Present
- Collaborating with a large team to develop HERCULES, a tool to provide policies that will divide the Linux kernel into smaller secure compartments to prevent an initial attempt at penetration from becoming a successful attack. Developing tools for dynamic analysis to identify principals and objects accessed by those principals in a safe way to aid in creating policies that prevent over-privilege.

- **Understanding Safety Comments in Rust for Linux**   June 2025 - Present
- Study of code comments that are used to document the safety of unsafe Rust code in the Linux kernel. Based on this study, I developed a categorization of safety comments and investigated ways in which these comments change with time. I am also working on finding a way to formalize these comments. This will lay the foundation for verifying whether these safety

comments contain the complete set of preconditions necessary to ensure that the unsafe code can be safely used.

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 a 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)
- Supervisor: Shannon Alfaro   September 2025 - December 2025
  Course: ICS 31 (Introduction to Programming)

Student Researcher at Google   July 2025 - September 2025
- Sifter: protecting security-critical kernel modules in Android through attack surface reduction
- Manager: Liz Prucka
- Sifter analyzes legitimate program behavior to learn syscall patterns and automatically generates fine-grained filters that block any abnormal patterns. In this project, I focused on securing the Mali GPU driver in Android by updating the Sifter repository with modern dependencies, developing kernel and userspace patches to support its functionality, and thoroughly evaluating the performance of the generated syscall filters.

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.

TEST SCORES

Graduate Record Examination (GRE)

January 6th 2022

- Total score: 333/340
- Verbal reasoning: 163/170 (92nd percentile)
- Quantitative reasoning: 170/170 (96th percentile)
- Analytical Writing: 5/6 (91st percentile)

Test of English as a Foreign Language (TOEFL)

May 25th 2022

- Total score: 116/120
- Reading: 30/30
- Listening: 30/30
- Speaking: 28/30
- Writing: 28/30

RELEVANT PROJECTS

University of California, Irvine   Irvine, California, USA

Network Security   March 2025 - May 2024

- Project: Evaluating Differential Privacy Applied to Machine Learning BCI Models for Motor Imagery Tasks
- Supervisor: Prof. Gene Tsudik
- Explored the effectiveness of global differential privacy (noise applied at training time) in terms of privacy guarantee, model performance, and runtime overhead at training time; across two BCI tasks (different data) and three state-of-the-art EEG ML models (different model architectures). Reproduced results of local differential privacy solutions and compared outcomes to our global differential privacy solutions.

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.

Data Structures and Algorithms   December 2019 - May 2020
- Project: DNA comparison using KMP algorithm
- Supervisor: Prof. Parveen Sultana
- A 'C' program to allow the user to input two strands of DNA and find the percentage similarity between them as well as identify whether a particular characteristic is present in the DNA.

Internet of Things   July 2020 - December 2020
- Project: Home Security System using Internet of Things
- Supervisor: Prof. Deepa K
- An embedded system which uses Arduino and various sensors attached to it. Its purpose was to alert the user if intruders, fire or excessive amounts of gas are detected. A notification would be sent to the user's phone using GSM module SIM-900A and a buzzer module would ring as an additional notification.

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. A C program to show the implementation of a file system.

Database Management Systems   July 2020 - December 2020
- Project: Hostel Management System
- Supervisor: Prof. Santhosh Kumar
- Design and implementation of a database to store details of students living in a hostel, as well as the user interface for it.

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, Rust
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. (2019-2023)
- School first in International English Olympiad. (IEO) (2010)