

Pranav Waghanna

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Education

University of Rochester , Master of Science in Computer Science	Aug 2024 – Dec 2025
• CGPA: 3.6/4.0	
• Coursework: Computer Security Foundations, Collaborative Programming, Intro to Cryptography	
Pune Institute of Computer Technology , Bachelor in Information Technology	Aug 2020 – Jun 2024
• CGPA: 8.19/10	
• Coursework: Operating Systems, Computer Networks, Processor Architecture, Data Structures and Algorithms	

Experience

Full Stack Developer , Huf India Pvt. Ltd – Pune, India	Jul 2023 – May 2024
• Led and managed a team of 8 engineers in developing a MERN stack application; provided real-time production data, enabling quicker decision-making.	
• Integrated Ant-Design forms for streamlined data submission and automated task scheduling through cron jobs, decreasing manual data entry errors by 15% and freeing up 10 hours per week for plant supervisors.	
• Leveraged ThingSpeak to store and retrieve data of produced items sent by ESP32 microprocessor. Utilized AWS EC2 instance to host the server along with Netlify for the frontend.	
• Engineered role-based access controls enabling technicians to monitor production via CanvasJS dashboards, trigger automated maintenance alerts, and perform quality assessments, resulting in 15% fewer errors weekly .	
• Reduced the manual processing time of the internal work from 1 week to a few seconds through digitization of documents and instant generation of graphs.	
• Facilitated daily stand-ups and weekly reviews, improving team communication and reducing blockers, which accelerated overall development progress by 20% .	

Projects

Houdini: VFS-layer Rootkit for FreeBSD (GitHub)	Sept 2025 – Dec 2025
• Implemented kernel-mode rootkit at the VFS layer, intercepting getdirents64() and process list VFS operations, hiding 6 files and processes.	
• Evaded security tools by bypassing traditional syscall based monitoring using VFS function pointers, demonstrating deep kernel compromise and overcoming challenges with defined constants.	
• Demonstrated expertise in kernel-mode programming on the FreeBSD operating system through VFS layer manipulation, investing 60 hours in rootkit design and implementation.	

HTB Penetration Testing Certification (GitHub)	Jul 2025 – Present
• Gained hands-on experience in simulated real-world environments by completing over 7 HTB labs, utilizing reconnaissance, vulnerability assessment, exploitation, and reporting methodologies, demonstrating a commitment to developing cybersecurity expertise.	
• Developed 2+ custom scripts using Python to automate exploitation tasks within HTB labs, decreasing average exploit development time by 30% and improving workflow for penetration testing.	
• Analyzed logs and documented the root cause of security vulnerabilities, accelerating incident response times by 15% through rapid identification and efficient communication processes.	

Skills

Languages: C++, C, Java, SQL, JavaScript, Python, Rust, HTML, CSS, Shell, Bash.

Technologies: MERN stack (MongoDB, Express, ReactJS, Node.js), nmap, Sockets, Cybersecurity, CAD, Cryptography, Computer Networks, Penetration Testing, Web Fuzzing, Footprinting, AWS(EC2, S3), Git, Unix, CAD

Publications

Effects of Adopting Industry 4.0 on a Manufacturing plant	Mar 2024
<i>P. Waghanna, A. Reddy, S. Deshpande, S. Chavan, V. R. Jaiswal and V. Naranje</i> 10.1109/ICRITO61523.2024.10522189	