Sudeep Ravichandran

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PROFESSIONAL SUMMARY

Cybersecurity graduate student with experience in anomaly detection, secure data systems, and privacy-preserving AI models. Strong foundation in network security, cryptography, incident response, and cloud security. Hands-on experience with Linux-based security tools, vulnerability analysis, and secure system design. Passionate about AI-driven security, threat detection, and offensive security fundamentals.

EDUCATION

- **Indiana University Bloomington** *2025 - 2027*
  Master of Science in Cybersecurity Risk Management; CGPA: 4.0/4.0 Bloomington, IN, USA
  ◦ **Relevant Coursework:** Risk Assessment & Management, Network Security, Privacy Law

- **College of Engineering Guindy, Anna University** *2021 - 2025*
  Bachelor of Engineering in Computer Science and Engineering; CGPA: 8.59/10.00 Chennai, TN, India
  ◦ **Relevant Coursework:** Data Structures & Algorithms, Database Management Systems, Machine Learning

RESEARCH WORK

- **LogREx: Reasoning-Enabled LLM and Knowledge Graph Based Anomaly Detection in System Logs**
  Under Dr. V. Vetriselvi (Professor), DCSE, College of Engineering Guindy
  ◦ Developed LogREx, a reasoning-enabled anomaly detection framework combining Large Language Models (LLMs) and Knowledge Graphs for interpretable system log analysis with superior performance over baseline models.
  ◦ Research paper accepted for publication in Springer's Lecture Notes in Networks and Systems (LNNS) series, presented at CIS 2025.

- **PCMedIR: Privacy-Enhancing Cross-Modal Medical Information Retrieval System in Cloud**
  Under Dr. V. Vetriselvi (Professor), DCSE, College of Engineering Guindy
  ◦ Developed a novel system for secure medical image retrieval using CLIP, Deep Pairwise Hashing (DPH), and hyperchaos-based encryption with steganography to ensure patient privacy and data integrity in cloud environments.
  ◦ Published in Springer's Lecture Notes in Networks and Systems (LNNS, Volume 1374) and presented at ICCIS 2024. Achieved 90% precision for text-to-image retrieval and 80% for image-to-text retrieval.

PROJECTS

- **SecureZone: Multi-Layer Network Security System with Automated SDN Response** *Aug 2025 - Dec 2025*
  Tools: Python, Flask, scikit-learn, SDN, UEBA, SSL/TLS, DNS Security [⌂]
  ◦ Built SecureZone, a 7-layer intrusion detection system integrating ML anomaly detection, SSL/TLS certificate inspection, DNS security, protocol analysis, UEBA, and threat intelligence correlation.
  ◦ Achieved 91.2% detection accuracy, 8.2% false positives, and sub-0.4 ms SDN isolation using automated, risk-adaptive network response policies.

- **Enhanced Spam Image Classification** *Oct 2023 - Nov 2023*
  Tools: Python, React JS, Tailwind CSS, Flask [⌂]
  ◦ Built a CNN-based image spam detection system to improve filtering of malicious and phishing-related visual content.
  ◦ Used augmentation for dataset robustness and evaluated performance using precision, recall, and F1-score.

- **Image-based Secure Data Embedding and Compression** *Nov 2024 - Nov 2024*
  Tools: Python, OpenCV, NumPy, Huffman Coding, Histogram Shifting [⌂]
  ◦ Developed an RGB steganography system using Huffman coding and histogram shifting, achieving 3x data capacity with strong imperceptibility.
  ◦ Integrated compression and security layers, achieving 48.32 dB PSNR for high-quality covert data embedding.

SKILLS

- **Cybersecurity Tools & Technologies:** Kali Linux, Burp Suite, Wireshark, Metasploit, Nmap, OWASP ZAP, Splunk, IDS/IPS (Snort), SDN Security
- **Security Frameworks & Standards:** OWASP Top 10, NIST CSF, Zero Trust Principles
- **Programming & Development:** Python (Security Automation), C, C++, JavaScript, Java, React.js, Next.js, Express.js, HTML, CSS, Tailwind CSS
- **Cloud & Databases:** AWS, Azure, Firebase, MySQL, PostgreSQL, MongoDB
- **DevOps & Version Control:** Git, GitHub, CI/CD Fundamentals

CERTIFICATIONS

- **Google Cybersecurity Specialization** *June 2023 - Dec 2023*
  Google

  A professional course that covers the use of Security Information and Event Management (SIEM) tools to protect networks, devices, people, and data against cyber threats and illegal access.

- **Fundamentals of Computer Network Security Specialization** *Oct 2022 - Feb 2023*
  University of Colorado System

  A professional course to master security principles and tools for securing networks, systems, and data.

- **GenAI 101 Certified Pathway** *Nov 2025*
  Indiana University Bloomington

  A university-issued professional certification covering Generative AI foundations, prompting, applied AI workflows, and responsible AI practices.

ACHIEVEMENTS

- **Winner of Startup Weekend Chennai 2022** *Feb 2022*
  Techstars [🌐]
  ◦ Built a 54-hour prototype of a barcode-scanning mobile app that delivers dietary compatibility and nutrient insights with a strong focus on user experience.

POSITIONS OF RESPONSIBILITY

- **Student Director - TechOps** *Jul 2024 - Jul 2025*
  CEG TECH FORUM
  ◦ Lead a student-run, ISO-certified organization with 900+ members, responsible for overseeing technical operations for 'Kurukshetra,' an international tech fest recognized by UNESCO.
  ◦ Manage and direct the TechOps team to ensure the flawless execution of technical events, workshops, and exhibitions, ensuring all technical requirements are met.
  ◦ Coordinate the integration of technical infrastructure, providing leadership in troubleshooting, system setup, and ensuring operational excellence for the festival's technical needs and maintaining system security.

- **Secretary - Logistics** *Aug 2024 - Jul 2025*
  Computer Science and Engineering Association (CSEA)
  ◦ Managed logistics and operations for department-level events, improving coordination, resource allocation, and student engagement.
  ◦ Oversaw end-to-end event planning and execution, ensuring timely delivery of technical and logistical support.

- **Deputy Director - Web and App** *Jul 2023 - Jul 2024*
  ACM CEG
  ◦ Designed and developed the Prodigy '24 website, enhancing usability and accessibility.
  ◦ Organized a mathematical quiz event for Prodigy '24, designing analytical challenges and managing event execution.

- **Treasurer - National Service Scheme - Unit 6** *Nov 2023 - May 2025*
  College of Engineering Guindy (CEG)
  ◦ Managed the finances of NSS Unit 6, ensuring transparent allocation of resources for community service projects and maintaining detailed records of funds and expenditures.
  ◦ Organized large-scale outreach programs, such as educational camps for school students, maximizing the impact of community initiatives through efficient resource management.