

Aviral Srivastava

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Summary

- Graduate student pursuing Master's program at Penn State University, with more than 20 publications and two awarded patents, co-edited a book on multidisciplinary research and co-authored a textbook on IOT
- Recipient of many prestigious awards, including Cybersecurity Innovator of the Year, Best international researcher and outstanding researcher for the fields of computer science, cybersecurity and neural cryptography, Distinguished researcher award, Asia's most promising researcher award in computer science in 2023 and InRes Academic excellence award 2023 for demonstrating exceptional research capabilities and innovation.
- Expertise in leveraging Machine Learning, Deep Learning, Reinforcement Learning, and Neural Networks to address complex cybersecurity issues. Also a keen learner of quantum computing
- Specialized in cryptography, notably Neural Cryptography, with a dedicated focus on using research to shape the future of cybersecurity.
- CEH practical and CEPT certified — HackTheBox global rank 150, Country (India) rank 2

Technical Skills

- **Programming Languages:** Python, C/C++, JavaScript, SQL, Bash, PowerShell
- **Cybersecurity:** Penetration Testing, Vulnerability Assessment, Incident Response, Malware Analysis, Red Teaming, Cryptography, Burp Suite, Metasploit, Nmap, Nessus, OWASP Tools
- **Development Tools:** VS Code, Jupyter, Git, Docker, Jenkins
- **AI/ML Technologies:** TensorFlow, PyTorch, Sci-kit Learn, Reinforcement Learning, Deep Learning
- **Cloud & Network Security:** AWS, Azure, Google Cloud, Network Security, Firewall, IPS/IDS, VPNs
- **Forensics & Incident Response:** Autopsy, EnCase, FTK, Volatility, Cyber Kill Chain, MITRE ATT&CK Framework

Education

Pennsylvania State University, University Park, PA

Master of Science, Cybersecurity Analytics and Operations

Expected May 2025

GPA - 4.0

Amity University, India

Bachelor of Technology, Computer Science

July 2023

GPA 3.4

Industry Experience

Cybersecurity Consultant Intern

May 2022 – Aug 2023

fnCyber, Hyderabad, India

- Led the creation and implementation of 250+ strategic project and service templates, increasing operational efficiency and standardization across the organization.
- Project-managed cloud migration of critical data assets, enhancing data security and operational resilience, affecting over 10,000 users.
- Executed over 50 comprehensive penetration tests and security audits, reducing potential security threats by 40% for various clients.
- Advised on and improved security architectures, resulting in a 30% enhancement in infrastructure security for five major clients through advanced threat modeling and DRP/BCP development.

Blue Team Intern

Nov 2022 – Dec 2022

Virtual Cyber Labs, Remote

- Performed in-depth Windows Memory Analysis, identifying and mitigating 10+ critical security threats.
- Developed and tested network security protocols, reducing vulnerability exposure by 25% across simulated environments.
- Analyzed and integrated ATT&CK frameworks, boosting cyber threat intelligence capabilities and improving threat response time by 20%.

Cloud Security Research Intern

Jun 2022 – Aug 2022

CyberFrat, Mumbai, India

- Directed 'Infosec Fusion' event with 1000+ participants, leading to a 50% increase in community engagement and professional development.

- Authored and contributed to the CCSP syllabus and published 5 research papers, enhancing the academic and practical understanding of cloud security.
- Secured 2nd place in The Global Hues' Top 10 Cybersecurity Companies ranking, elevating the organization's market position.

Cybersecurity Research Intern

July 2021 – Jan 2022

ComExpo Cybersecurity, Ahmedabad, India

- Published 3 significant research papers on cybersecurity, including a pioneering study on steganography presented at ICSCDS 2022.
- Led research on big data security and image steganography, resulting in development of 2 proprietary security models.

Cybersecurity Intern

Aug 2021 – Feb 2022

Infosec United, Remote

- Played a key role in a community of 1500+ cybersecurity enthusiasts, organizing 5 national CTF competitions and enhancing collective cybersecurity acumen.
- Facilitated 10+ hacking workshops, increasing hands-on cybersecurity skills among participants by 35%.

Cybersecurity Analyst Intern

Sep 2021 – Nov 2021

TalaKunchi Networks Pvt Ltd, Maharashtra, India

- Contributed to 3 major security projects, leading to a 20% improvement in authentication security measures.
- Performed comprehensive security assessments using OWASP ZAP, identifying and resolving 100+ security issues.

Teaching Experience

- **Instructional Assistant, CYBER 440: Cybersecurity Analytics and Operations Capstone**
Pennsylvania State University, College of information sciences and technology, Spring 2024
 - Supported the course instructor in facilitating advanced cybersecurity analysis experiences for students.
 - Assisted in presenting analytic frameworks prevalent in the industry, guiding students through complex cybersecurity incident analyses.
 - Aided in compiling and presenting findings suitable for both technical and high-level audiences, emphasizing clear communication and effective report writing.
 - Conducted office hours to provide additional support and guidance, ensuring students' understanding and application of course materials and frameworks.
 - Contributed to the students' learning experience by helping them navigate through realistic data volumes and signal-to-noise ratios to document and present their findings.

Publications

- **Cauchy Grasshopper Optimization Algorithm with Deep Learning Model for Cloud Enabled Cyber Threat Detection System**, 2023 7th International Conference on Intelligent Computing and Control Systems (ICICCS)
- **Stego Dog: Image Steganography Tool for Confidentiality and Integrity**, 2022 International Conference on Sustainable Computing and Data Communication Systems (ICSCDS)
- **Efficient Data Hiding Method in Image Based on Modified LSB**, 2022 IEEE 2nd International Symposium on Sustainable Energy, Signal Processing and Cyber Security (iSSSC)
- **An Overview on Emerging Security Threats in Big Data Clusters and their Defenses**, 2022 International Conference on Edge Computing and Applications (ICECAA)
- **Enhancing Cloud Security with a Fuzzy Rule-Based Classifier for Intrusion Detection and Classification**, 5th International Conference on Inventive Research in Computing Applications
- **EEG Classification using Reinforcement Learning and Swarm based Deep Sparse Autoencoder**, 5th International Conference on Inventive Research in Computing Applications
- **Revolutionizing IoT Network Security with Deep Learning- Anomaly Detection Model**, 4th International Conference on Electronics and Sustainable Communication Systems (ICESC - 2023)

- **Secure Horizons: Advanced Protection Mechanisms for Holographic Data Storage Systems**, *Springer International Conference on Recent Developments in Cyber Security*
- **Adaptive Cyber Defense: Leveraging Neuromorphic Computing for Advanced Threat Detection and Response**, *International Conference on Sustainable Computing and Smart Systems (ICSCSS-2023)*
- **IMPERCEPTIBLE MALWARE: Bypassing modern AV-engine with AI assisted code**, *IJEAST*
- **Identification and Monitoring of Malware with Several Detection System—A Systematic Review**, *JECA*
- **Lattice-based Cryptography For IoT And Cloud Security**, *Gis Science*
- **Swarm intelligence for network security: a new approach to user behavior analysis**, *IRJET*
- **Outsmarting the smart: unraveling the rise of ai-powered malware and the battle for cybersecurity**, *13TH INTERNATIONAL ISTANBUL SCIENTIFIC RESEARCH CONGRESS*
- **Multimodal Sensor Data Fusion Based Cyberattack Detection in Industrial Internet of Things Environment**, *2023 7th International Conference on Electronics, Communication and Aerospace Technology (ICECA)*
- **Hybrid Multimodal Machine Learning Driven Android Malware Recognition and Classification Model**, *2023 7th International Conference on Electronics, Communication and Aerospace Technology (ICECA)*
- **Securing the Future of IoT: A Comprehensive Framework for Real-Time Attack Detection and Mitigation in IoT Networks**, *2023 14th International Conference on Computing Communication and Networking Technologies (ICCCNT)*
- **Automated Intrusion Detection and Classification using Binary Metaheuristics with Deep Learning on Smart Cities**, *2023 International Conference on Sustainable Communication Networks and Application (ICSCNA)*
- **Securing IoT-Edge Networks: Federated Deep Learning for Botnet Detection**, *2023 7th International Conference on Electronics, Communication and Aerospace Technology (ICECA)*
- **Unveiling the Veil of Deception: An Insightful Journey into Adversarial Attacks and Defence Mechanisms in Deep Learning Networks**, *2023 6th International Conference on Contemporary Computing and Informatics (IC3I)*
- **Intelligent False Data Injection Attack Detection Using Soft Computing in Cyber-Physical Power Systems**, *2023 7th International Conference on Electronics, Communication and Aerospace Technology (ICECA)*

Media coverage

Cover page feature by insights success magazine "Cyber™ Security Consulting and Services: Ensuring A 360° Functional Cyber Resilient Global Business World - Magazine

Google books IGI global: **Unraveling the Server: Mastering Server-Side Attacks for Ethical Hacking** - google books

Article feature HVCK magazine - **Securing the road ahead: A comprehensive approach to Ad-hoc and V2V security** - HVCK magazine

Certifications

- Certified Ethical Hacker Practical (CEH) - EC-Council, Oct 2022
- Certified Penetration Testing Expert (CPTE) - Pristine Infosolutions Pvt. Ltd., Nov 2021
- ISO/IEC 27001 Information Security Associate - SkillFront, May 2021
- Gremlin Certified Chaos Engineering Practitioner (GCCEP) - Gremlin, Jun 2021

Achievements

- Ranked 237th among 64,000 hackers in Ring0 CTF
- "PRO HACKER" rank in HackTheBox, global ranking 150 and India ranking 2
- Young Researcher Award from the Institute of Management Bhubaneswar
- Young Researcher Award for the paper "StegoDOG" from the Institute of Scholars
- ISSN Best International Researcher Award in Computer Science and Cybersecurity
- Cybersecurity Innovator of the Year at Bsides Bangalore 2023
- ISSN International Outstanding Researcher Award in Neural Cryptography
- Most Promising Researcher in Cybersecurity and Cryptography in Asia
- Best Young Researcher Award 2023 from the International Journal for Modern Trends in Science and Technology
- Distinguished Researcher Award of the Year at the 9th International Millennium Impact Awards 2023
- Academic Excellence Award 2023 from the Institute of Researchers
- Representation at the Bangalore Tech Summit 2022 for my company

Hackathons/Conferences

Bsides Ahmedabad 0x03 Security conference

Attendee

Oct 2022

Ahmedabad

DEF CON Delhi event

Invited

Aug 2022

Delhi

Bsides Ahmedabad 0x02 Security conference

Attendee

Nov 2021

Ahmedabad

Bsides Bangalore Security conference

Awardee

june 2023

Bangalore