YASHAS HARIPRASAD

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RESEARCH INTERESTS

Quantum Computing, Artificial Intelligence, Machine Learning, Deep Learning, Cyber Security & Digital Forensics, Deepfakes, Cloud Security & Networks, and IoT

EDUCATION

Ph.D., Computer Science — **April 2025**
Florida International University — Miami, FL, USA

MS., Computer Science — **December 2023**
Florida International University — Miami, FL, USA

BS., Computer Science and Engineering — **June 2020**
Visvesvaraya Technological University — India

BOOKS AUTHORED/CO-AUTHORED

1. **Yashas Hariprasad**, SS. Iyengar, H.B. Prasad, "Securing Multimedia in the Age of Deepfakes: AI-Driven Forensics and Quantum-Resilient Cyber Defense", **Springer Nature**, (Forthcoming, May 2026)
2. SS. Iyengar, Sina Nabavi, **Yashas Hariprasad**, H.B. Prasad, Krishna Mohan, "Artificial Intelligence in Practice: Theory and Applications for Cyber Security and Forensics", **Springer Nature**, June 2025, ISBN-978-3-031-89326-1
3. Jerry F. Miller, **Yashas Hariprasad**, Ranvir Iyengar, "The Circuit Rider of Mississippi: An Indian Immigrant's Story in the Post-Jim Crow South", **Penguin Publishers**, February 2025, ISBN-979-8992573848

RESEARCH PUBLICATIONS

Invited Articles:

37. **Yashas Hariprasad,** S.S. Iyengar, "Quantum Scheme Protects Videos from Prying Eyes and Tampering", ***The Conversation***, August 2025. doi:10.64628/AAI.fudg4vajc

Peer Reviewed Journals:

36. **Yashas Hariprasad,** Sharan Reddy, Levent Ertaul, "Toward Quantum-Resilient Multimedia Security: A Survey of Encryption and Forensic Techniques", ***IEEE MultiMedia Journal***, September 2025 (Accepted).
35. Shashank Gupta, **Yashas Hariprasad**, S.S. Iyengar, Pronab Mohanty, "Enhancing Digital Security: Quantum-Trained Neural Networks for Robust Deepfake Detection," **ACM Digital Threats: Research and Practice (DTRAP)**, 2025 (Under Revision).
34. **Yashas Hariprasad,** SS. Iyengar, Naveen Chaudhary, "Securing the Future: Advanced Encryption for Quantum-Safe Video Transmission", ***IEEE Transactions on Consumer Electronics***, 2024, doi: 10.1109/TCE.2024.3473542.
33. SS. Iyengar, Sina, Hemant, **Yashas Hariprasad**, Naveen Chaudhary, "Advancing Forensic Science: AI and Knowledge Graphs Unlock New Insights", ***Journal of Forensic Research***, 15 (2024): 615

32. **Yashas Hariprasad,** SS. Iyengar, Manjunath Ghate, "Deepfake Video Detection Using Lip Region Analysis with Advanced Artificial Intelligence Based Anomaly Detection Technique", ***Journal of Forensic Research***, 15 (2024): 626

31. SS. Iyengar, G. Ganesh, Naveen Chaudhary, **Yashas Hariprasad**. "AI-Enhanced Smart Materials and Sensor Optimization for Underwater Soft Robots." **IEEE TechRxiv**. July 09, 2024.

30. Thejas GS, **Yashas Hariprasad**, SS. Iyengar, Sunitha, Badrinath, Chennupati, "An Extension of Synthetic Minority Oversampling Technique based on Kalman filter for Imbalanced Datasets". ***Elsevier, Machine Learning with Applications,*** 8, 100267, 2022

29. S.S. Iyengar, **Yashas Hariprasad**, "The Illusion of Safety: Why Content Moderation Must Fall" ***Communications of the ACM***, April 2025 (Under Review)

28. **Yashas Hariprasad**, S.S. Iyengar, Jerry Miller, Pronab Mohanty, Naveen Chaudhary, "Empowering Future Cybersecurity Leaders: Advancing Students through FINDS Education for Digital Forensic Excellence," **IEEE Access Journal**, 2025 (Under Final Review)

27. Jadon, Jeffrey, Anand, Baskar, Prasad, SS. Iyengar, **Yashas Hariprasad,** "A Detailed Survey of Cryptocurrency Dynamics: Comparing Bitcoin and Ethereum Blockchain Technologies", ***ACM Computing Surveys***, July 2024 (Under Review)

26. **Yashas Hariprasad,** "Orchestrating Robust Deep Learning Neural Networks: A Brooks-Iyengar Symphony", ***IEEE Open Access Journal*** July 2024 (Under Review).

Referred Conference Papers:

25. Subhash G, Trivikram Satharasi, **Yashas Hariprasad**, and S.S. Iyengar, "MedSR-Vision: Deep Learning Framework for Multi-Domain Medical Image Super-Resolution", International Conference on Computational Science & Computational Intelligence ***(CSCI'25)***, 2025 (Accepted)

24. Subhash G, **Yashas Hariprasad**, S.S. Iyengar, Naveen Chaudhary, "Botnet Detection on CTU-13 Using Lightweight Machine Learning Models", International Conference on Information Security, Privacy and Digital Forensics ***(ICISPD)***, 2025 (Accepted)

23. **Yashas Hariprasad**, "Quantum-Resilient Video Encryption: Safeguarding Future Transmissions", ***ACM TAPIA Conference***, 2024.

22. **Yashas Hariprasad,** G. Ganesh, SS. Iyengar, Naveen Chaudhary "Efficient Video Deepfake Detection Using Boundary Hashing and Recurrent Neural Networks", International Conference on Information Security, Privacy and Digital Forensics ***(ICISPD)***, 2024

21. **Yashas Hariprasad,** Nagarjun TS., Suraj, Latesh Kumar, C. Miller, Naveen Chaudhary, "AI-ML Analytics: A Comprehensive Investigation on Sentimental Analysis for Social Media Forensics Textual Data", In Proceedings of ***Science and Information Conference***, pp. 923-935, Springer Nature, 2023

20. Miller, Egharevba, **Yashas Hariprasad**, Latesh Kumar, and Naveen Chaudhary. "Cyber Security Attack Detection Framework for DODAG Control Message Flooding in an IoT Network." In Proceedings of International Conference on Information Security, Privacy and Digital Forensics, ***(ICISPD)***, pp. 213-230. Springer Nature, 2023.

19. Konrad Sniatała, **Yashas Hariprasad,** Latesh Kumar, Naveen Chaudhary, Michal Weissenberg, "Fog Forensics: A Comprehensive Review of Forensic Models for Fog Computing Environment", In Proceedings of International Conference on Information Security, Privacy and Digital Forensics, ***(ICISPD)***, pp. 31-42, Springer Nature, 2023.

18. **Yashas Hariprasad,** Latesh Kumar, Suraj, SS. Iyengar. "Boundary-Based Fake Face Anomaly Detection in Videos Using Recurrent Neural Networks." In Proceedings of ***Intelligent Systems***

Conference, pp. 155-169. Springer Nature, 2022.

Book Chapters:

17. **Yashas Hariprasad**, Subhash Gurappa, Pronab Mohanty "Multi-Modal Deep Learning Framework for Forensic Emotion and Behavior Signal Analysis", "Artificial Intelligence Driven Forensics", Springer Nature, May 2025

16. Ken Furton, S.S. Iyengar, **Yashas Hariprasad**, Himali Upadhyay, Rodolof Mesa Martin, Amy L Roda, "Sniffing Out Snails: Artificial Intelligence Powered Canine Forensics of Invasive Species – A Preliminary Study", "Artificial Intelligence Driven Forensics", Springer Nature, May 2025

15. Tessy Tom, **Yashas Hariprasad**, Pronab Mohanty, Anthony Puthuserry, "Artificial Intelligence Driven Multimedia Forensics: Enhancing Detection, Provenance Analysis, and Robustness Against Manipulations", "Artificial Intelligence Driven Forensics", Springer Nature, May 2025

14. Vasanth Iyer, Vamshikrishna Challa, Pronab Mohanty, **Yashas Hariprasad**, S.S. Iyengar, "Instruction-Level Fine-Tuning of Gemma-2B for Cybersecurity and Synthetic Log Generation Aligned with MITRE Adversarial Tactics, Techniques, and Common Knowledge", "Artificial Intelligence Driven Forensics", Springer Nature, May 2025

13. SS. Iyengar, Sina Nabavi, **Yashas Hariprasad**, H.B. Prasad, Krishna Mohan, "Cyber Threat Intelligence and Security for Federated Learning in Digital Forensics." In Artificial Intelligence in Practice: Theory and Application for Cyber Security and Forensics, pp. 177-199. Cham: Springer Nature, 2025.

12. SS. Iyengar, Sina Nabavi, **Yashas Hariprasad**, H.B. Prasad, Krishna Mohan, "Detecting and Understanding the Impact of Profile Cloning on Social Media Platforms: A Case Study of LinkedIn." In Artificial Intelligence in Practice: Theory and Application for Cyber Security and Forensics, pp. 203-225. Cham: Springer Nature, 2025.

11. SS. Iyengar, Sina Nabavi, **Yashas Hariprasad**, H.B. Prasad, Krishna Mohan, "Hybrid Detection of Malicious Portable Document Format (PDFs): Safeguarding Against Embedded JavaScript Attacks." In Artificial Intelligence in Practice: Theory and Application for Cyber Security and Forensics, pp. 257-290. Cham: Springer Nature, 2025.

10. SS. Iyengar, Sina Nabavi, **Yashas Hariprasad**, H.B. Prasad, Krishna Mohan, "Future of AI-Driven Digital Forensics." In Artificial Intelligence in Practice: Theory and Application for Cyber Security and Forensics, pp. 335-364. Cham: Springer Nature, 2025.

9. SS. Iyengar, Sina Nabavi, **Yashas Hariprasad**, H.B. Prasad, Krishna Mohan, "Cybersecurity Foundations: Theories, Technologies, and Applications." In Artificial Intelligence in Practice: Theory and Application for Cyber Security and Forensics, pp. 27-87. Cham: Springer Nature, 2025.

8. SS. Iyengar, Sina Nabavi, **Yashas Hariprasad**, H.B. Prasad, Krishna Mohan, "Digital Forensics: Tools, Techniques, and Methodologies." In Artificial Intelligence in Practice: Theory and Application for Cyber Security and Forensics, pp. 89-137. Cham: Springer Nature, 2025.

7. SS. Iyengar, Sina Nabavi, **Yashas Hariprasad**, H.B. Prasad, Krishna Mohan, "Real-Time Aquatic Forensics: Harnessing AI for Efficient Underwater Target Recognition." In Artificial Intelligence in Practice: Theory and Application for Cyber Security and Forensics, pp. 291-307. Cham: Springer Nature, 2025.

6. SS. Iyengar, Sina Nabavi, **Yashas Hariprasad**, H.B. Prasad, Krishna Mohan, "The Evolution of Artificial Intelligence and Machine Learning." In Artificial Intelligence in Practice: Theory and Application for Cyber Security and Forensics, pp. 3-26. Cham: Springer Nature, 2025.

5. SS. Iyengar, Sina Nabavi, **Yashas Hariprasad**, H.B. Prasad, Krishna Mohan, "Privacy-Preserving AI (Federated Learning) for Digital Forensics." In Artificial Intelligence in Practice: Theory and Application for Cyber Security and Forensics, pp. 161-176. Cham: Springer Nature, 2025.
4. SS. Iyengar, Sina Nabavi, **Yashas Hariprasad**, H.B. Prasad, Krishna Mohan, "Temporal Deepfake Generation and Detection in Video Sequences Using Recurrent Neural Networks (RNNs)." In Artificial Intelligence in Practice: Theory and Application for Cyber Security and Forensics, pp. 309-334. Cham: Springer Nature, 2025.
3. SS. Iyengar, Sina Nabavi, **Yashas Hariprasad**, H.B. Prasad, Krishna Mohan, "AI-Enhanced Malware Detection: Advancing Security Through Intelligent Threat Identification." In Artificial Intelligence in Practice: Theory and Application for Cyber Security and Forensics, pp. 227-255. Cham: Springer Nature, 2025.
2. SS. Iyengar, Sina Nabavi, **Yashas Hariprasad**, H.B. Prasad, Krishna Mohan, "The Convergence of AI/ML and Cybersecurity: Advancing Digital Forensic Techniques." In Artificial Intelligence in Practice: Theory and Application for Cyber Security and Forensics, pp. 139-159. Cham: Springer Nature, 2025.
1. Latesh Kumar, **Yashas Hariprasad,** and Naveen Chaudhary "AI-Powered Correlation Technique to Detect Virtual Machine Attacks in Private Cloud Environment" "AI Embedded Assurance for Cyber Systems", Springer Nature, 2023

PATENTS

1. Deepfake Video Detection System Using Lip Region Analysis and Advanced AI-Based Anomaly Detection Techniques, (US Patent Pending), Serial No. 63/815,151; filed May 30, 2025
2. AI-Driven Correlation Technique for Detecting Virtual Machine Attacks in Cloud Environments, (US Patent Pending), March 2023
3. AI and Sensor Integrated Framework for Contagious Disease Detection, (US Patent Pending), March 2023

PROFESSIONAL EMPLOYMENT & EXPERIENCE

Assistant Professor **August 2025 - Present**
Department of Computer Science Hayward, CA
Cal State University

- Conducting research in AI-driven Cybersecurity, Digital forensics and Quantum Security solutions with a focus on advanced threat detection and mitigation.
- Teaching undergraduate and graduate courses in Cybersecurity, Analysis of Algorithms, AI for security, and Digital forensics, enhancing student engagement through real-world case studies and hands-on lab experiences.
- Supervising graduate and undergraduate research projects, leading to high-impact publications and industry collaborations.
- Developing new curriculum modules in AI-powered digital forensics and quantum cybersecurity, improving course relevance to industry demands.
- Establishing interdisciplinary collaborations with global research institutions and industry partners to advance cybersecurity and forensic research.

Research Assistant/Coordinator **August 2021 - July 2025**
US Army Funded FINDS Digital Forensics Center of Excellence Miami, FL
Florida International University

- Co-Led and coordinated several AI and digital forensics research projects under a $2.25 million US Army-funded FINDS Center of Excellence (PI: Dr. Iyengar).

- Mentored and guided 12+ students, leading to a 25% increase in research productivity and co-authorship in many peer-reviewed publications.
- Played a key role in writing proposals for over $1.5 million in research funding through NSF and US Army Research Office proposals.
- Collaborated with researchers from Poznan University of Technology (Poland) and National Forensic Sciences University (India), PES University (India)m co-authoring 8 publications and presenting at 5 conferences.
- Co-Led high-impact technical projects, outcomes presented to over 500 experts across 6 countries.
- Assisted in the design and delivery of 2 graduate-level courses, leading to a 25% increase in student enrollment and an 18% improvement in course feedback ratings.
- Supervised 10+ laboratory projects, driving a 35% increase in student project completion rates.

Business Systems and Operations Manager **December 2018 - January 2022**
Puregem Naturals LLP, GramyaDharma Bangalore, India

- Digitized accounting workflows by implementing Tally ERP, improving financial transparency and streamlining reconciliation.
- Deployed GS1 barcoding systems to automate product tracking across 120+ SKUs, cutting manual errors by 40% and enhancing supply chain visibility.
- Engineered and optimized the Order-to-Cash (O2C) process, redesigning order and invoice routing to improve cash flow cycles by 25%.
- Applied process automation in the manufacturing plant, driving a 20% efficiency gain in production of value-added organic food products.
- Built and managed a customer support resolution system, enabling 95+ nationwide clients to have 90% of issues resolved within 24 hours, increasing customer satisfaction.
- Designed and executed data-driven cost optimization strategies, reducing operational expenses by 22% and turning around a failing business into profitability within 1.5 years.
- Directed cross-functional technology and process upgrade projects, maintaining 95% system uptime and cutting system-related downtime by 50%.
- Coordinated large-scale export logistics, leveraging ERP and tracking systems to support international shipments of organic sugar and red chillies.

Security Risk Analyst **July 2020 - June 2021**
VMWARE Inc. Bangalore, India

- Led and Conducted comprehensive risk assessments for over 120 applications within VMware
- Co-led and Developed an improvised reporting dashboard for management
- Evaluated/reported potential vulnerabilities/threats on various application's security posture
- Collaborated cross-functional teams, devised effective strategies for risk mitigation/remediation
- Contributed to a significant improvement in team performance by addressing a large backlog pool, reducing it by 25% resulting in doubling the team's effectiveness.

Security Risk Intern **January 2020 - June 2020**
VMWARE Inc. Bangalore, India

- Evaluated vulnerabilities and potential threats for VMware's applications
- Assisted in documenting the findings, including vulnerabilities identified
- Assisted in preparing reports and presentations
- Collaborated effectively within the team; participated in training and workshops

Summer Research Intern **May 2019 - July 2019**
Science Without Borders Program Miami, FL
Florida International University

- Developed/Created a Hybrid oversampling algorithm (Kalman-SMOTE) with 99% Accuracy.
- Researched Machine Learning and Data Oversampling Algorithms.
- Collected and preprocessed large datasets from various sources
- Designed rigorous experiments and implemented machine learning algorithms, focusing on oversampling techniques to address class imbalance
- Collaborated with researchers from the University of North Carolina at Chapel Hill, Tarleton State University

GRANT WRITING EXPERIENCE

- "Collaborative Research: SaTC: CORE: Medium: Advanced Innovative Learning-Based Framework for Cybersecurity Operation Identification in IT and OT Environments", U.S. National Science Foundation, 2023 ($1,199,226)
- "SaTC: CORE: Small: NSF-Meity: Authentication Framework for Camera-Equipped Cyber-physical Systems", U.S. National Science Foundation, 2023 ($600,000)
- "SaTC: CORE: Small: NSF-DST: ZeroTrust Screen- Machine Learned Network Sniffing & Behavior Analysis for Intrusion Detection Systems", U.S. National Science Foundation, 2023 ($600,000)
- "Collaborative Research: SaTC: Medium: A Brain-Inspired Hardware-Software Framework for Adversarially Robust Sensor Fusion", U.S. National Science Foundation, 2023 ($480,000)

FEATURED PRESS & MEDIA COVERAGE

- Featured in FIU News for receiving the 2025 FIU Distinguished Presidential Award.
- Recognized in Ahmedabad Mirror (Times of India) and several other news media outlets for AI-powered digital forensics and threat intelligence innovations.
- Featured in The Tribune, showcasing contributions to AI in cybersecurity and digital investigations.
- Featured in ANI News for advancements in AI-driven cybersecurity and forensic technologies.
- Covered by Press Trust of India (PTI) highlighting research on deepfake detection and quantum encryption.
- Recognized by FIU News for founding FIU's first-ever Artificial Intelligence and Coding Club, aimed at redefining the role of AI in education and student innovation.
- Featured in PantherNOW for leading the organization of FIU's multicultural Diwali celebration as the President of the Indian Student Association, fostering cultural pride, collaboration, and community among student groups.
- Media spotlight in various global media outlets and publications on AI-enhanced forensic techniques and quantum cryptographic security.

HONORS / AWARDS / RECOGNITIONS

- 2025 FIU Distinguished Presidential Award
- Elected Full Member of Sigma Xi, The Scientific Research Honor Society, 2025
- 2025 FIU Outstanding Scholar Award (Finalist)
- 2025 FIU Outstanding Innovation Award (Finalist)
- Elected Associate Member of Sigma Xi, The Scientific Research Honor Society, 2023
- Invited Advisory Board Consultant - AI and Software Engineering, Keiser University, 2024

- 2024 FIU Outstanding Scholar Award (Finalist)
- FIU SGA Best Graduate Student Award, 2023-2024
- Medal of Appreciation from the Commander of DISA (Defense Information Systems Agency), United States Department of Defense (DoD) combat support agency, April 2023.
- Outstanding Research Paper Presenter - International Conference on Information Security, Privacy and Digital Forensics (ICISPD) 2022.
- FIU Distinguished Leadership Award, 2024 (Nominated)
- CMD-IT/ACM Richard Tapia Celebration of Diversity in Computing Conference Scholarship Award 2024 (Nominated)
- Annual Graduate Research Assistantship from US Army Funded Digital Forensics Center of Excellence, School of Computing and Info. Sciences, 2021 - 2025.
- Best Project of the Year Award, Siddaganga Institute of Technology, Tumkur, 2019.

TECHNICAL / PROGRAMMING SKILL-SET

Technical Skills: C, C++, Python3, SQL, Django, Machine Learning, Supervised/Unsupervised Learning, Neural Networks, Data Analysis, Data Visualization, Statistical Data Modelling, Quantum Computational Encryption.
System Management: BI Tools Integration, Advanced Planning/Scheduling, System Upgrades, Data Security and Integrity, Tally Solutions.
Project Management: Software Integration, Budget Planning, Cross-Functional Collaboration.
Data Management: Backup & Recovery, Data Security Protocols, BI Reporting, Data Encryption.
Machine Learning Tools: Scikit-Learn, Pandas, Numpy, Imbalanced-Learn, Random Forest, XGBoost, k-means, Feature Engineering.
Other Tools: Codeblocks, Anaconda3, Latex, Android Studio, RSA Archer, MS Office, Power BI.
Other Skills: Leadership, Team building, Problem Solving, Communication, and Decision-making.

TALKS/SEMINARS

- Safeguarding Authenticity: Quantum Encryption and Artificial Intelligence in the Battle Against Deepfakes, Siddaganga Institute of Technology, Tumkur, December 2024.
- Control Flow Optimization: Understanding Loops and Iteration Techniques, Saint Mary's College of California, December 2024.
- Efficient Data Retrieval and Storage Using Hashing Techniques, Austin College, Sherman, Texas, November 2024.
- Quantum Encryption and AI-Driven Defense Mechanisms Against Deepfake Manipulation, California State University, East Bay, November 2024.
- Optimized Data Indexing and Retrieval Using Hashing Techniques, California State University, East Bay, November 2024.
- Virtual 12th Annual Forensics Symposium, Miami, USA, June 2023.
- AI Powered Sentimental Analysis for Text Data, London (Virtual), June 2023.
- AI and Digital Forensics, FIU, DISA (Defense Information Systems Agency), United States Department of Defense Combat Support Agency, April 2023.
- Machine Learning Techniques, Nova High School Students, FIU, January 2023.
- Digital forensics Trends, FIU, December 2022.
- Forensic Models for Fog Computing Environment, BITS Pilani, Goa, December 2022.
- IOT Network Attack Detection, National Forensics Sciences University, Goa, December 2022.
- AI Powered Bigdata Digital Forensics, FIU Tech Station, November 2022.
- AI and NN-based Fake Face Anomaly Detection in Videos, Netherlands (Virtual), September 2022.

- Deep Learning-Powered Anomaly Detection and Forensic Analysis for Advanced Deepfakes, FIU, March 2022.
- Stuxnet, Principles of Cybersecurity Graduate Class, FIU, November 2021.
- Improving imbalanced learn through heuristic oversampling method, SIT Tumkur, February 2020.
- Science Without Borders, KSMOTE: An Extension of Synthetic Minority Oversampling Technique for Imbalanced Datasets, FIU, July 2019.

RESEARCH PROJECT SUPERVISION/COORDINATION

- Richard Tairouz, Florida International University, Spring 2024
- Shivaraj Karjagi, Cisco, Summer 2023
- Pradeep Rabri, National Forensics Sciences University, Summer 2023
- Aarush Chaubey, Doral Academy Charter High School, Summer 2023
- Shivani Ganti, Miami High School Student, Summer 2023
- Chance Miller, Florida International University, Fall 2022, Spring 2023
- Suraj L, Evive Softwares, Summer 2022
- Nagarjun TS, Bharat Electronics Limited (BEL), Summer 2022
- Ahmad Adamu Jajere, National Forensics Sciences University, Summer 2022

PROFESSIONAL ACTIVITIES

- Member of IEEE
- Professional Member of ACM
- Elected Full Member of Sigma Xi, The Scientific Research Honor Society,
- Invited Judge, 70th Annual South Florida Regional Science and Engineering Fair, USA, 2024
- Judge, URFIU (UndergraduateResearch @ FIU), Miami, 2024
- Judge, Undergraduate Research Conference, Florida International University, 2022
- Invited Reviewer, IEEE Access, ACM Computing Surveys, IEEE MultiMedia, ACM-DTRAP, IEEE Communications Letters, International Journal of Sensors Wireless Communications and Control
- Facilitator to the Associate Editor of ACM Computing Surveys, 2021 - 2025
- Mentor/Guide to High School/Undergraduate/Graduate Students, Summer 2022, 2023, 2024
- Organizer and Coordinator for an invited talk titled "Machine Learning System Development Life Cycle – State of the Art" by Prof. Shiva at FIU, March 2023
- Assisted PI for INTERPOL *'Global Digital Forensics'* Talk (2022), and *'Future of Digital Forensic for National Security'* Talk at Defence Strategies Institute, Washington'23.
- Supervised 1 High School and 5 Undergraduate Students for Summer Research Program on Digital Forensics, FINDS Center of Excellence, Summer 2022, 2023, 2024

SAMPLE RESEARCH / INDUSTRY PROJECTS

- **Technology-Driven Operations and Supply Chain Optimization**
  - Implemented Tally ERP to digitize accounting workflows, automate reporting, and improve financial transparency.
  - Deployed GS1 barcoding systems across 120+ SKUs, automating inventory tracking and reducing manual errors by 40%.
  - Automated key steps in the Order-to-Cash (O2C) cycle), improving cash flow cycles by 25%.
  - Applied process optimization and tech-enabled monitoring at the manufacturing plant, increasing production efficiency by 20%.
  - Built a customer support resolution system to manage 95+ accounts, resolving 90% of issues within 24 hours and raising customer satisfaction by 15%.

  - Leveraged ERP and digital tracking systems to coordinate large-scale exports of organic sugar and red chillies, ensuring compliance and timely delivery in international markets.
- **Barter-market on Wheels**
  - Innovated a mobile supermarket solution, serving over 10,000 farmers in rural India.
  - Developed a unique automated barter system with a 95% accuracy rate in grain quality detection using image processing.
  - Optimized route mapping, reducing delivery times by 20% and increasing access to essentials.
- **Smart Traffic Lights Simulation using Xigbee and Machine Learning**
  - Engineered a predictive traffic light system, improving traffic flow efficiency by 25%.
  - Utilized Zigbee communication and PIR sensors, resulting in a 20% reduction in congestion in simulated environments.
  - Demonstrated potential to reduce average commute times by 15% in urban areas.
- **Fool-proof Public Distribution System**
  - Designed a secure distribution system linking Aadhaar and Ration cards, eliminating 95% of leakages and fraud in pilot tests.
  - Introduced smart packaging and barcoded labeling, increasing distribution accuracy by 30%.
  - Enhanced accountability and efficiency in government food distribution programs.

WORKSHOP AND TRAINING

- 6-week summer research program on Digital Forensics conducted by FINDS Research Center of Excellence, KFSCIS, FIU, June-July 2021.
- VMware SaaS Essentials Training.
- VMware India New Grad Boot Camp, Risk Management project using RSA Archer.
- Industrial Training in I.O.T. with Machine Learning, Monkfox Inc., June-July 2018.
- Develop Project Workshop, IEEE-SIT, 2017.
- Workshop on AI and ML, Bangalore Chamber of Industry and Commerce (B.C.I.C.), September 2018.

ORGANIZATIONS AND SERVICE

- Member, Information Technology Advisory Committee (ITAC), Academic Senate, Cal State East Bay, 2025
- Member, Artificial Intelligence Task Force, Dept. of Computer Science, Cal State East Bay, 2025
- Member, Graduate Committee, Dept. of Computer Science, Cal State East Bay, 2025
- Member, Outreach Committee, Dept. of Computer Science, Cal State East Bay, 2025
- PhD Representative, Student Advisory Council, Knight Foundation School of Computing and Information Sciences, FIU, 2023, 2024
- Founding President, 'Artificial Intelligence and Coding Club at FIU', 2022, 2023 https://panthernow.com/2022/08/11/meet-the-new-club-trying-to-reshape-the-meaning-of-artificial-intelligence/
- President of 'Indian Students Association', FIU, 2022, 2023, 2024
- Founding Vice-President, 'International HSC Council', FIU, 2023, 2024
- Member of 'Pathfinder'- An Elite Student Organization of S.I.T., Tumkur, India, 2017-2022
- Student Cultural Coordinator of S.I.T. Tumkur and Halcyon, India, 2020

References will be furnished upon request