UMIT KARABIYIK, PH.D.

Associate Professor of Cybersecurity
Director of Ubiquitous & Mobile Investigative Techniques and Technologies Lab
Department of Computer and Information Technology
Purdue University
West Lafayette, IN, 47906
Email: umit@purdue.edu
Phone: 765-496-6877

RESEARCH INTERESTS

Digital Forensics and Cybersecurity (Mobile and IoT Forensics, Computer and Disk Forensics, Social Network Forensics, User and Data Privacy & Security), **Forensic Intelligence** (OSINT), **Applying Artificial Intelligence in Cyberforensics** (Machine Learning, Deep Learning, Expert Systems, Knowledge Representation), **Computer and Network Security** (Modern Cryptography, Encrypted File Analysis, Email Accountability)

EDUCATION

Doctor of Philosophy *August 2015*
Department of Computer Science, Florida State University, Tallahassee, Florida
Dissertation: "Building an Intelligent Assistant for Digital Forensics"
Advisor: Dr. Sudhir Aggarwal

Master of Science *August 2010*
Department of Computer Science, Florida State University, Tallahassee, Florida
Project: "Email Accountability with Spamassassin Integrated Exim Mail Transfer Agent"
Advisor: Dr. Zhenhai Duan

Bachelor of Science *September 2006*
Department of Electronic and Computer Systems Teaching, Sakarya University, Sakarya, Turkey
Thesis: "Virtual FPGA Laboratory Remote Learning System"
Advisor: Dr. Ahmet T. Ozcerit

EMPLOYMENT

Computer and Information Technology, Purdue University Aug 2022 - Present
Associate Professor (Tenured) *West Lafayette, IN*

Computer and Information Technology, Purdue University Aug 2018 - Aug 2022
Assistant Professor *West Lafayette, IN*

Computer Science, Sam Houston State University Aug 2015 - Aug 2018
Assistant Professor *Huntsville, TX*

PUBLICATIONS

JOURNALS:

1. Hutchinson, S., Stankovi, M., Ho, S., Houshmand, S., and **Karabiyik, U.**. Investigating the Privacy and Security of the SimpliSafe Security System on Android and iOS. *Journal of Cybersecurity and Privacy* (2023), 3(2), 145-165.

2. Bowling, H., Seigfried-Spellar, K., **Karabiyik, U.** and Rogers, M. "We are meeting on Microsoft Teams: Forensic Analysis in Windows, Android and iOS Operating Systems," in *Journal of Forensic Sciences* (2023), 68(2), pp.434-460. [**IF: 1.717**]

3. Mirza, M. M., Ozer, A. and **Karabiyik, U.** "Cyber Forensic Investigations of Web3 Wallets on Android and iOS," in *Applied Sciences* (2022) 12(21), 11180. [**IF: 2.838**]

4. Keim, Y., Hutchinson, S., Shrivastava, A., and **Karabiyik, U.** "Forensic Analysis of TikTok Alternatives on Android and iOS Devices: Byte, Dubsmash, and Triller," in *Electronics* (2022) 11(18), 2972. [**IF: 2.690**]

5. Hutchinson, S., Mirza, M. M., West, N., **Karabiyik, U.**, Rogers, M., Mukherjee, T., Aggarwal, S., Haeyong, C., and Pettus-Davis, C. "Investigating Wearable Fitness Applications: Data Privacy and Digital Forensics Analysis on Android," in *Applied Sciences* (2022) 12(19), 9747. [**IF: 2.838**]

6. Stankovi, M. and **Karabiyik, U.** "Exploratory Study on Kali NetHunter Lite: A Digital Forensics Approach," in *Journal of Cybersecurity and Privacy* (2022) 2(3), 750-763.

7. Salamh, F.E., Mirza, M. M., Hutchinson, S., Yoon, Y.H. and **Karabiyik, U.** "Whats on the Horizon? An In-Depth Forensic Analysis of Android and iOS Applications," in *IEEE Access*, vol. 9, pp. 99421-99454, 2021. [**IF: 3.476**]

8. Stankovi, M., Mirza, M.M., and **Karabiyik, U.** "UAV Forensics: DJI Mini 2 Case Study". *Drones* (2021), 5, 49. [**IF: 5.532**]

9. Salamh, F.E., **Karabiyik, U.**, Rogers, M.K., and Matson, E.T. "A Comparative UAV Forensic Analysis: Static and Live Digital Evidence Traceability Challenges". *Drones* (2021), 5, 42. [**IF: 5.532**]

10. Salamh, F. E., Mirza, M. M., and **Karabiyik, U.**."UAV Forensic Analysis and Software Tools Assessment: DJI Phantom 4 and Matrice 210 as Case Studies". *Electronics* (2021), 10(6), 733. [**IF: 2.412**]

11. Salamh, F. E., **Karabiyik, U.**, and Rogers, M. "A Constructive DIREST Security Threat Modeling for Drone as a Service," *Journal of Digital Forensics, Security and Law*: Vol. 16 , Article 2.

12. Keim, Y., Yoon, Y.H., and **Karabiyik, U.** "Digital Forensics Analysis of Ubuntu Touch on PinePhone." *Electronics* (2021), 10, 343. [**IF: 2.412**]

13. Tzvetanov, K., **Karabiyik, U.** "A first look at forensic analysis of SailfishOS", *Computers & Security* (2020), 102054. [**IF: 3.579**]

14. Cline, T. L., Lercel, D., **Karabiyik, U.**, & Dietz, J. (2020). "The Current State of Counter Unmanned Aerial System Policy in the U.S." *International Journal of Aviation, Aeronautics, and Aerospace*, 7(3).

15. Yoon, Y.H., **Karabiyik, U.** "Forensic Analysis of Fitbit Versa 2 Data on Android". *Electronics* (2020), 9, 1431. [**IF: 2.412**]

16. **Karabiyik, U.**, Karabiyik, T. "A Game Theoretic Approach for Digital Forensic Tool Selection." *Mathematics* 8.5 (2020): 774. [**IF: 1.747**]

17. Hughes, N., & **Karabiyik, U.** (2020). "Towards reliable digital forensics investigations through measurement science." *WIREs Forensic Science*. https://doi.org/10.1002/wfs2.1367

18. Salamh, F., **Karabiyik, U.,** & Rogers, M., "RPAS Forensic Validation Analysis Towards a Technical Investigation Process: A Case Study of Yuneec Typhoon H", *Sensors*, 19(15), 2019. doi: 10.3390/s19153246. [**IF: 3.275**]

19. Sablatura, J., & **Karabiyik, U.** "Pokémon GO Forensics: An Android Application Analysis," *Information,* 2017, 8, 71.

20. **Karabiyik, U.**, Canbaz, M.A., Aksoy, A., Tuna, T., Akbas, E., Gonen, B., & Aygun, R. "A Survey of Social Network Forensics", *Journal of Digital Forensics, Security and Law*, 11.4 (2016): 8.

21. Tuna, T., Akbas, E., Aksoy, A., Canbaz, M.A., **Karabiyik, U.**, Gonen, B., & Aygun, R. "User characterization for online social networks", *Social Network Analysis and Mining*, 6(1):104, 2016.

22. **Karabiyik, U.,** & Aggarwal, S. "AUDIT: Automated Disk Investigation Toolkit", *Journal of Digital Forensics, Security and Law (JDFSL)*, 9.2 (2014): 129.

CONFERENCE PROCEEDINGS:

1. Diliberti, N., Chung, H., Keim, Y., Rogers, M.K., **Karabiyik, U.**, Aggarwal, S., Mukherjee, M. and Davis-Pettus, C. "Supporting and Motivating Re-integration of Justice-Involved Individuals Through Dynamic Gamification." In: Kurosu, M., Hashizume, A. (eds) Human-Computer Interaction. HCII 2023. Lecture Notes in Computer Science, vol 14014. Springer, Cham, (2023).

2. Dorai, G., Hutchinson, S., Rodriguez, B., and **Karabiyik, U.** "Mobile Commerce - Analysis and Investigation of the Online Safety, Privacy, and Data Forensics of Amazon and Etsy Apps," in the *Hawaii International Conference on System Sciences (HICCS 55)*, 2023.

3. Zhou, J. & **Karabiyik, U.** "Forensic Analysis of Webex on the iOS Platform," In *13th EAI International Conference on Digital Forensics & Cyber Crime*, Boston, USA, 2022. **[To Appear]**

4. Zhou, J. & **Karabiyik, U.** "Your WeChat Wallet: Digital Forensics Approach on WeChat Payments on Android," In *13th EAI International Conference on Digital Forensics & Cyber Crime*, Boston, USA, 2022. **[To Appear]**

5. Matulis, N. & **Karabiyik, U.** "Digital Forensics for Mobility as a Service Platform: Analysis of Uber Application on IPhone and Cloud." In *16th Annual ADFSL Conference on Digital Forensics, Security and Law*, 2022. 5.

6. Ho, S., Greeson, H. & **Karabiyik, U.** "Smart Home Forensics: Identifying DDoS Attack Patterns on IoT Devices." In *16th Annual ADFSL Conference on Digital Forensics, Security and Law*, 2022. 6.

7. Lint, G. & **Karabiyik, U.** "Detection of Overlapping Passive Manipulation Techniques in Image Forensics." In *16th Annual ADFSL Conference on Digital Forensics, Security and Law*, 2022. 4.

8. Mirza, M. M. & **Karabiyik, U.** "Enhancing IP Address Geocoding, Geolocating and Visualization for Digital Forensics." In *2021 International Symposium on Networks, Computers and Communications (ISNCC)*, 2021, pp. 1-7, doi: 10.1109/ISNCC52172.2021.9615668.

9. Kumar, S. T. & **Karabiyik, U.** "Instagram Forensic Analysis Revisited: Does anything really vanish?" In *2021 International Symposium on Networks, Computers and Communications (ISNCC)*, 2021, pp. 1-6, doi: 10.1109/ISNCC52172.2021.9615910.

10. Moffitt, K., **Karabiyik, U.**, Hutchinson, D., and Yoon, Y. H. (2021). "Discord Forensics: The Logs Keep Growing." *In 2021 IEEE 11th Annual Computing and Communication Workshop and Conference (CCWC)*, pp. 0993-0999. IEEE, 2021.

11. Salamh, F., **Karabiyik, U.**, Rogers, M. K., and Matson, E. T. (2021). "Unmanned Aerial Vehicle Kill Chain: Purple Teaming Tactics." *In 2021 IEEE 11th Annual Computing and Communication Workshop and Conference (CCWC)* (pp. 1081-1087). IEEE.

12. Hutchinson, S., Shantaram, N., **Karabiyik, U.**, "Forensic Analysis of Dating Applications on Android and iOS Devices", 1*9th IEEE International Conference on Trust, Security and Privacy in Computing and Communications (TrustCom)*, IEEE, 2020. **(Accepted)**

13. Salamh, F., **Karabiyik, U.,** & Rogers, M. (2020). "Asynchronous Forensic Investigative Approach to Recover Deleted Data from Instant Messaging Applications". *In 2020 International Symposium on Networks, Computers and Communications (ISNCC)*. IEEE. **(To Appear)**

14. Hutchinson, S., & **Karabiyik, U.** (2020). "'Forensic Analysis of the August Smart Device Ecosystem". *In 2020 International Symposium on Networks, Computers and Communications (ISNCC)*. IEEE. **(To Appear)**

15. Hutchinson, S., Yoon, Y.H., Shantaram, N., & Karabiyik, U. (2020) "Internet of Things Forensics in Smart Homes: Design, Implementation and Analysis of Smart Home Laboratory." In *2020 ASEE Virtual Annual Conference Content Access, Virtual On line* . https://peer.asee.org/34868

16. Mirza, M., Salamh, F., & **Karabiyik**, U. (2020). "An Android Case Study on Technical Anti-Forensic Challenges of Whatsapp Application" in *8th International Symposium on Digital Forensics and Security (ISDFS)*, Beirut, Lebanon, 2020, pp. 1-6, doi: 10.1109/ISDFS49300.2020.9116192.

17. Shimmi, S., Dorai, G., **Karabiyik**, U., & Aggarwal, S. (2020). "Analysis of iOS SQLite Schema Evolution for Updating Forensic Data Extraction Tools" in *8th International Symposium on Digital Forensics and Security (ISDFS)*, Beirut, Lebanon, 2020, pp. 1-7, doi: 10.1109/ISDFS49300.2020.9116208.

18. Hutchinson, S., Zhou, B., & **Karabiyik, U.** (2019). "Are We Really Protected? An Investigation into the Play Protect Service" (pp. 49975004). Lost Angeles, CA, USA: *2019 IEEE International Conference on Big Data (Big Data)*. https://doi.org/10.1109/BigData47090.2019.9006100

19. **Karabiyik, U.,** Mousas, C., Sirota, D., Iwai, T., & Akdere, M. (2019). "A Virtual Reality Framework for Training Incident First Responders and Digital Forensic Investigators" (pp. 469480). *International Symposium on Visual Computing.*

20. Aggarwal, S., Dorai, G., **Karabiyik, U.,** Mukherjee, T., Guerra, N., Hernandez, M., Wilson, R. (2019). "A Targeted Data Extraction System for Mobile Devices" (pp. 73100). *IFIP International Conference on Digital Forensics.*

21. Salamh, F., **Karabiyik, U.,** Rogers, M. K., & AL-Hazemi, F. (2019). "Drone Disrupted Denial of Service Attack (3DOS): Towards an Incident Response and Forensic Analysis of Remotely Piloted Aerial Systems (RPASs)." Tangier, Morocco: *15th IEEE International Wireless Communications & Mobile Computing Conference (IWCMC).*

22. Salam, A., & **Karabiyik, U.** (2019). "A Cooperative Overlay Approach at the Physical Layer of Cognitive Radio for Digital Agriculture." *In Third International Balkan Conference on Communications and Networking 2019 (BalkanCom19).* Skopje, Macedonia, the former Yugoslav Republic of.

23. Hutchinson, S., & **Karabiyik**, U. (2019). "Forensic Analysis of Spy Applications in Android Devices." Daytona Beach, Florida, USA: *Proceedings of Annual ADFSL Conference on Digital Forensics, Security and Law.*

24. Bays, Jason, & **Karabiyik**, U. "Forensic Analysis of Third Party Location Applications in Android and iOS," IEEE INFOCOM 2019 - IEEE Conference on Computer Communications Workshops (INFOCOM WKSHPS), Paris, France, 2019, pp. 1-6.

25. Rabieh, K., Akkaya, K., & **Karabiyik**, U., Qamruddin, J. (2018). "A Secure and Cloud-based Medical Records Access Scheme for on-Road Emergencies" (pp. 18). *Proceedings of the 2018 15th IEEE Annual Consumer Communications & Networking Conference (CCNC).*

26. Yildiz, F., Holekamp, J., Pecen, R. & **Karabiyik**, U., (2018). "Design and Development of a Supervisory Control and Data Acquisition (SCADA) Laboratory." *Proceedings of the 125th ASEE Annual Conference and Exposition.*

27. Duncan, M., & **Karabiyik**, U. (2018). "Detection and Recovery of Anti-Forensic(Vault) Applications on Android Devices." *Proceedings of the Annual ADFSL Conference on Digital Forensics.*

28. Lawrence, T., **Karabiyik**, U., & Shashidhar, N. (2018). "Equipping a Digital Forensic Lab on a Budget" (pp. 17). *Proceedings of the 6th IEEE International Symposium on Digital Forensic and Security (ISDFS).*

29. Rathi, K., **Karabiyik**, U., Aderibigbe, T.,& Chi, H. (2018). "Forensic Analysis of Encrypted Instant Messaging Applications on Android" (pp. 16). *Proceedings of the 6th IEEE International Symposium on Digital Forensic and Security (ISDFS).*

30. **Karabiyik, U.**, Celebi, N., Yildiz, F., Holekamp, J., & Rabieh, K. (2018). "Forensic Analysis of SCADA/ICS System with Security and Vulnerability Assessment." *Proceedings of the 125th ASEE Annual Conference and Exposition.*

31. Neyaz, A., Shashidhar, N., & **Karabiyik, U.** (2018). "Forensic Analysis of Wear Leveling on Solid-State Media "(pp. 17061710). *17th IEEE International Conference On Trust, Security And Privacy In Computing And Communications/12th IEEE International Conference On Big Data Science And Engineering (TrustCom/BigDataSE).*

32. Carson, J., **Karabiyik, U.**, de Luna, E., & Rabieh, K. (2018). "Voteproject: Smart Democracy - A Blockchain Voting System Proof of Concept." Las Vegas, NV, USA: *Proceedings of Annual Information Institute Conference.*

33. **Karabiyik, U.**, & Karabiyik, T. (2017). "Digital Forensics Tool Selection with Multi-armed Bandit Problem." Daytona Beach, USA: *Proceedings of the ADFSL 2017 Conference on Digital Forensics, Security and Law.*

34. **Karabiyik, U.**, & Aggarwal, S. (2016). "Model of hierarchical disk investigation" (pp. 8488). *Proceedings of the 4th IEEE International Symposium on Digital Forensic and Security (ISDFS).* **(BEST PAPER AWARD)**

35. Sablatura, J., & **Karabiyik, U.** (2016). "The forensic effectiveness of virtual disk sanitization" (pp. 126131). *Proceedings of the 4th IEEE International Symposium on Digital Forensic and Security (ISDFS).*

36. **Karabiyik, U.,** & Aggarwal, S. (2016). "Advanced Automated Disk Investigation Toolkit", *Advances in Digital Forensics XII*, G. Peterson and S. Shenoi (Eds.), Springer, Heidelberg. (ISBN: 978-3-319-46278-3)

37. Houshmand, S., Aggarwal, A., & **Karabiyik, U**. (2015). "Identifying passwords stored on disk", Advances in Digital Forensics XI, G. Peterson and S. Shenoi (Eds.), Springer, Heidelberg. (ISBN: 978-3-319-24122-7)

BOOK CHAPTERS:

1. **Karabiyik, U.,** & Akkaya, U. (2019). Digital Forensics In IoT and WSNs. In *Mission-Oriented Sensor Networks and Systems: Art and Science* (Vol. 164). Springer, Cham.

POSTERS:

1. Akdere, M., Abdinoor, J., Moats, J., **Karabiyik, U.**, Kocsis, J., Stankovic, M., Fernando, M. (2021, June) "Cyber Resilience Adaptive Virtual Reality Experiences (CRAVRE)." *23rd Annual Emergency Management Higher Education Virtual Symposium, FEMA.*

2. Stankovic, M., Frey, G., Abdinoor, J., **Karabiyik, U.**, Akdere, M. (2021, April) "Cyber Resilience Adaptive Virtual Reality Experiences (CRAVRE)." *Future Work and Learning Research Impact Area, Purdue Polytechnic Institute.*

3. Mirza, M. M., **Karabiyik, U.** (2020) "Evaluation of GPS EXIF Data Reporting for Digital Forensics Tools." In *CERIAS Annual Security Symposium, Purdue University.*

4. **Karabiyik, U.**, Mousas, C., Sirota, D., Iwai, T., Akdere, M. (2019) "A Virtual Reality Framework for Training Incident First Responders and Digital Forensic Investigators." *International Symposium on Visual Computing, Springer.*

5. Salamh, F., **Karabiyik, U.**, Rogers, M. (2019) "Drone Disrupted Denial of Service Attack (3DOS): Towards an Incident Response and Forensic Analysis of Remotely Piloted Aerial Systems (RPASs)". In *The 21st Annual CERIAS Security Symposium*, Purdue University.

6. Vukadinović, N. V., Seigfried-Spellar, K., Rogers, M., **Karabiyik, U.** (2019) "WhatsApp Forensics: Locating Artifacts on Web Clients and Standalone Desktop Applications". In *The 21st Annual CERIAS Security Symposium*, Purdue University.

DISSERTATION:

1. **Karabiyik, U.**, "Building an intelligent assistant for digital forensics" (Doctoral dissertation, THE FLORIDA STATE UNIVERSITY), 2015.

FUNDED GRANTS

EXTERNAL–AWARDED:

- ***Digital Forensics Targeted Search-Phase 4***, NextFlex on behalf of National Air and Space Intelligence Center, (Role: PI, Total Funding Awarded: **$165K**), *Jan 2023 - Aug 2023.*
- ***Enhanced Internet of Things National Training and Technical Assistance Program***, U.S. Department Of Justice, Bureau of Justice Assistance, (Role: PI, Total Funding Awarded: **$290,997**), *January 1, 2023 - December 31, 2023.*
- ***Digital Forensics Targeted Search-Phase 3***, BMNT on behalf of National Air and Space Intelligence Center, (Role: co-PI, Total Funding Awarded: **$204,315.02**), *May 2022 - Dec 2022.*
- ***Digital Forensics Targeted Search-Phase 2***, BMNT on behalf of National Air and Space Intelligence Center, (Role: co-PI, Total Funding Awarded: **$87,592.11**), *January 2022 - May 2022.*
- ***Internet of Things National Training and Technical Assistance Program***, U.S. Department Of Justice, Grant Award Number: 15PBJA-21-GK-03996-INTE, (Role: PI, Total Funding Awarded: **$297,967**), *October 1, 2021 - March 31, 2023.*
- ***Scalable Multiphone Targeted Data Extraction System***, National Institute of Justice, Grant Award Number: 15PNIJ-21-GG-04155-RESS, (Role: co-PI, Total Funding Awarded: **$600,984**) *January 1, 2022 - December 31, 2023.*
- ***Digital Forensics Targeted Search***, National Air and Space Intelligence Center, (Role: co-PI, Total Funding Awarded: **$87,592.11**), *November 2021 - April 2022.*
- ***5-Data Preprocessing for Splunk***, BMNT on behalf of National Air and Space Intelligence Center, (Role: co-PI, Total Funding Awarded: **$20,747.00**), *January 2021 - May 2021.*
- ***Cyber Resilience Adaptive Virtual Reality Experiences (CRAVRE)***, Department of Homeland Security & FEMA, (Role: co-PI, Total Funding Awarded: **$1.5M**), *September 2020 - August 2023.*

- ***AI Enabled Community Supervision for Criminal Justice Services***, National Institute of Justice, Grant Award Number: 2019-75-CX-K001, (Role: co-PI, Total Funding Awarded: **$2M**), *January 2020 - December 2023.*
- ***Lockheed Martin- Purdue Collaborative Project*** LOCKHEED MARTIN CORPORATION, (Role: PI, Total Funding Awarded: **$210,465.00**), *September 1, 2020 - August 31, 2021.*
- ***CERIAS Ukrainian/US Cybersecurity Faculty and Curriculum Development Program***, CRDF Global, (Role: co-PI, Total Funding Awarded: **$130,898.30**), *July 13, 2021 - January 15, 2022.*
- ***CERIAS Ukrainian Critical Infrastruture Protection Events***, CRDF Global, (Role: co-PI, Total Funding Awarded: **$70,766.40**), *July 13, 2021 - January 15, 2022.*
- ***Targeted Forensic Data Extraction from Mobile Devices***, National Institute of Justice, Grant Award Number: 2016-MU-CX-K003 (Role: co-PI, Total Funding Awarded: **$541,232**, *January 2017 - December 2018*
- ***NSF CISE CAREER Workshop 2018***, Travel Award, Total amount: **$1,000**

EXTERNAL–NON-AWARDED:

- ***A Framework For Evidence Collection And Prevention Mechanism For Technology-Facilitated Abuse***, Submitted to National Institute of Justice, (Role: co-PI, Total Funding Requested: $300,000).
- ***Strengthening Information Technology Talent in Cambodia (SITTC)***, Submitted to United States Agency for International Development (USAID), (Role: co-PI, Total Funding Requested: $15,000,000)
- ***Cease-the-Covert: A Framework for Evidence Collection and Prevention Mechanism for Technology-facilitated Abuse***, Submitted to National Science Foundation (NSF), (Role: co-PI, Total Funding Requested: $450,000)
- ***SPI-SHeD: Security, Privacy, and Integrity in Smart Home Devices***, Submitted to Facebook Research, (Role: PI, Total Funding Requested: $74,940)
- ***REU Site: Undergraduate Research Experience in Cybersecurity and Digital Forensics***, Submitted to National Science Foundation, (Role: PI, Total Funding Requested: $483,042.75)
- ***Educational Opportunities for Students in Computer Forensics and Digital Evidence***, Submitted to Department of Justice, (Role: PI, Total Funding Requested: $755,035.30)
- ***Towards Enhanced Fingerprint Identification Systems using Network Embedding***, Submitted to National Institute of Justice, (Role: Co-PI, Total Funding Requested: $461,059.67)
- ***REU Site: Purdue Cybersecurity and Digital Forensics Research Academy for Undergraduates***, Submitted to National Science Foundation, (Role: PI, Total Funding Requested: $364,126.37)

INTERNAL–AWARDED:

- ***Timestamp Verification for Outdoor Images***, Purdue Polytechnic Institute, Holistic Safety and Security Research Impact Area Seed Grant, (Role: co-PI, Award: **$8,000**), July 2022-June 2023
- ***Developing Research, Education and Training Sphere for Mobile and IoT Forensics***, Purdue Polytechnic Institute, Holistic Safety and Security Research Impact Area Seed Grant, (Role: PI, Award: **$12,000**), July 2019-June 2020

- ***Virtual Reality Training for Incident First Responders and Digital Forensics Investigators***, Purdue Polytechnic Institute, Holistic Safety and Security Research Impact Area Seed Grant, (Role: PI, Award: **$10,000**), November 2018-June 2019
- ***MobiLyze: Mobile Device Evidence Planting and Forensic Analysis***, COSET Summer Research Award 2018, Sam Houston State University, Total amount: **$4,500**
- ***Technology Enhanced Mandatory Recitation Sessions***, Teaching Innovation Grant, Sam Houston State University, (Role: PI, Award:**$5,200**), November 2017-August 2018
- ***Digital Forensics Tools Raking with Multi-armed Bandit Problem***, Faculty Research Grant, Sam Houston State University (Role: PI, Award:**$5,000**), June-September 2016

PATENTS

1. Rogers, M.K, Salamh, F.E., and **Karabiyik, U**. "Automating digital forensic evidence collection." U.S. Patent Application 17/006,154, filed March 4, 2021.
2. Aggarwal, S., Dorai, G., **Karabiyik, U.**, Mukherjee, T., Guerra, N.A., Hernandez-Romero, M., Parsons, J. and Rathi, K. "Targeted data extraction system and method." U.S. Patent 11,513,812, issued November 29, 2022.

ACADEMIC PRESENTATIONS AND GUEST LECTURES

"*Understanding and Collecting Wearable Fitness Device Evidence: Case Studies and Evidence*," Keynote at the National Internet of Things (IoT) Investigative Conference, Orlando, FL, January 2023.

"*Digital Forensic Investigations - The Holistic Approach*," The 23rd Annual CERIAS Security Symposium Tech Talk, Purdue University, West Lafayette, IN, April 2022.

"*Forensic Analysis of Third Party Location Applications in Android and iOS*," IEEE INFOCOM 2019 - IEEE Conference on Computer Communications, Paris, France, April 2019.

"*Targeted Data Extraction System for Mobile Devices*," The 21st Annual CERIAS Security Symposium Tech Talk, Purdue University, West Lafayette, IN, April 2019.

"*Reevaluating the Mobile Forensic Acquisition Levels*," American Academy of Forensic Sciences 71st Annual Scientific Meeting, Baltimore, MD, February 2019.

"*Introduction to Digital Forensics*," Purdue University, Forensic Science Appreciation Course, February 2019.

"*Academic Job Hunting*," North American University, Houston, TX, October 2015

"*Building an Intelligent Assistant for Digital Forensics*", Florida State University, Tallahassee, FL, August 2015

"*AUDIT: Automated Disk Investigation Toolkit*," E-Crime Investigative Technologies Laboratory (ECIT), Florida State University, Tallahassee, FL, June 2014

"*Integration of Digital Forensics Tools and Illegal Image Search on Disk*," Demo, Department of Computer Science Exposition, Florida State University, Tallahassee, FL, December 2012

"*Integrating Tools and Artificial Intelligence Techniques for Disk Forensics*," Florida State University, Tallahassee, FL, December 2012

"*Email Accountability with Spamassassin Integrated Exim Mail Transfer Agent*," Florida State University, Tallahassee, FL, August 2010

HONORS AND AWARDS

- Outstanding Faculty Award in Discovery, Department of Computer and Information Technology, Purdue University, 2021
- Outstanding Faculty in Engagement, Department of Computer and Information Technology, Purdue University, 2021
- Peoples Choice Poster Award Winner, 23rd Annual Emergency Management Higher Education Virtual Symposium, 2021
- Seed for Success Award, Excellence in Research, Purdue University, 2020
- Outstanding ACM Chapter Advisor, Sam Houston State University, 2017
- Best paper award, IEEE 4th Int. Symposium on Digital Forensics and Security, Little Rock, AR, 2016
- Honorable Mention Innovation Award, ASACAD, 2014

MEMBERSHIPS AND CERTIFICATES

Member, American Academy of Forensic Sciences
Member, The American Society of Digital Forensics & eDiscovery
Member, IEEE since 2013
Member, Association of Computing Machinery (ACM) since 2013
Member, IEEE Communications Society
Member, IFIP Working Group 11.9 on Digital Forensics
Member, Association of Digital Forensics, Security and Law
Member, European Alliance for Innovation
Member, The Institute for Computer Sciences, Social Informatics and Telecommunications Eng. (ICST)
Member, Florida State University Alumni Association
Member, The Association for Academic Advancement (ASACAD) Scholars
Certificate, Mobile Forensics 5-Day Training, Robert Morris University, 2017
Certificate, Machine Learning, Coursera, 2012
Certificate, Program for Instructional Excellence, FSU, 2011

PROFESSIONAL SERVICES

Proposal Review

NSF Reviewer, 2023
National Nuclear Security Administration Minority Serving Institution Partnership Program (NNSA MSIPP) Reviewer, 2020

Journal Editorial Board

Guest Editor, MDPI Electronics
Associate Editor-in-Chief, Journal of Digital Forensics, Security and Law (JDFSL)
Topic Editor, MDPI Electronics
Junior Editorial Board Member, Journal of Surveillance, Security and Safety

Conference Chair

Conference Chair, ADSFL Conference on Digital Forensics, Security and Law, 2022-2023
TPC Chair, IEEE International Symposium on Networks, Computers and Communications, 2022-2023
Conference Chair, ADSFL Conference on Digital Forensics, Security and Law, 2021-2022
TPC Chair, IEEE International Symposium on Networks, Computers and Communications, 2020-2021
TPC Chair, ADSFL Conference on Digital Forensics, Security and Law, 2019-2020 (*Cancelled after*

review process due to COVID-19)
Conference Chair, ADSFL Conference on Digital Forensics, Security and Law, 2018-2019

Conference Technical Program Committee
Mamber, USENIX Security 2024
Member, International Workshop on Secure and Reliable Microservices and Containers
Member, IEEE CNS-CPS-Sec: International Workshop on Cyber-Physical Systems Security
Member, IEEE-International Conference on Computing, Networking and Communications
Member, IFIP Working Group 11.9 on Digital Forensics
Member, International Conference on Digital Forensics and Cyber Crime
Member, ADFSL Conference on Digital Forensics, Security and Law
Member, International Workshop on Cloud Security and Forensics
Member, International Symposium on Digital Forensics and Security

Reviewer
Reviewer, IEEE Access (2020-Present)
Reviewer, Forensic Science International: Digital Investigation (2020-Present)
Reviewer, Computers & Security (2020-Present)
Reviewer, IEEE Transactions on Network and Service Management (2019)
Reviewer, Hawaii International Conference on System Sciences (HICSS) (2019)
Reviewer, IEEE Transactions on Vehicular Technology (2019)
Reviewer, PLOS ONE (Journal)
Reviewer, Tsinghua Science and Technology (Journal)
Reviewer, The Journal of Digital Forensics, Security and Law
Reviewer, Security and Communication Networks (Journal)
Reviewer, IEEE International Conference on Communications
Reviewer, International Journal of Security and Networks
Reviewer, The Philosophy of Mission-Oriented Wireless Sensor Networks (Book chapter)

Services at University and Greater Community
Committee Chair, CIT Search Committee for Cybersecurity position (August 2022 - May 2023)
Faculty Advisor, Women in Cybersecurity (WiCyS) Purdue University Chapter (August 2021 - Present)
Steering Committee Member, Inclusion, Diversity, Equity and Advocacy (IDEA) at Purdue Polytechnic Institute, Purdue (2021 - Present).
Co-Lead, IDEA Working Group on Curriculum and Research, Purdue (2022 - Present).
Chair, Cybersecurity Curriculum Subcommittee, Department of Computer and Information Technology, Purdue (September 2022 - Present).
At-large Member, Graduate Education Committee, Department of Computer and Information Technology, Purdue (September 2020 - 2022).
Committee Member, Cybersecurity Curriculum Subcommittee, Department of Computer and Information Technology, Purdue (September 2018 - 2022).
Committee Member, Faculty Grievance Committee, Purdue Polytechnic Institute. (August 13, 2019 - 2020).
Faculty Member, College Excellence in Award Committee, COSET, SHSU, 2017-2018
Advisory Board Member, Florida A&M University Cyber Center, 2016-Current
Faculty Liaison, Huntsville Police Department and SHSU community, 2016-2018
Faculty Member, Who's Who Selection Committee, Sam Houston State University, 2016-2018
Faculty Advisor, SHSU ACM Student Chapter, 2016-2018
Faculty Member, Graduate Curriculum Committee, 2015-2018
Faculty Member, Undergraduate Curriculum Committee, 2015-2018
Judge, The Most Robust Design in Pay Dirt, BEST Robotics Competition, Southeast Texas Hub, 2015

STUDENT RESEARCH ADVISING

Current Graduate Students at Purdue University

Shinelle Hutchinson, *Doctoral Candidate*, 2019-Present
Mohammad M. Mirza, *Doctoral Candidate*, 2020-Present
Milos Stankovic, *Doctoral Student*, 2021-Present
Samuel Ho, *MS Student with Thesis*, 2022-Present

Former Graduate Students at Purdue University
Fahad Salamh, *PhD*, 2018-2021
Travis Cline, *PhD*, 2019-2021
Jiaxuan Zhou, *MS Student with Thesis*, 2020-2022
Nina Matulis, *MS Student with Project*, 2020-2023
Praveen Medikonda, *MS Student with Thesis*, 2021-2022
Qiyuan Li, *MS with thesis*, 2020-2022
Sienna Bates, *MS with thesis*, 2020-2022
Neesha Shantaram, *MS with thesis*, 2019-2021
Yung Han Yoon, *MS with thesis*, 2019-2021

Former Graduate Students at Sam Houston State University
Khushboo Rathi, *MS with thesis* (2016-2018)
Nicholette Pollak, *MS with project* (2017-2018)
Regina Bobbitt, *MS with project* (2015-2016)
Joshua Sablatura, *MS with project* (2016-2017)
Larry Carter, *MS with project* (2016-2017)
Jennifer Carson, *MS with project* (2015-2017)
Michaila Duncan, *MS with project* (2015-2017)

TECHNICAL SKILLS

Computer	Cellebrite UFED 4PC and Physical Analyzer, Magnet AXIOM Process and Examine, MSAB XRY, EnCase, Paraben EEE, Autopsy, Sleuthkit, ProDiscover, C, C++, Java, Python, CLIPS, JESS, Visual C++, Visual Basic .NET, MATLAB, Mathematica, LaTeX in Unix/Linux & Windows environments Programming Microprocessors and Microcontrollers in C
Languages	English, Turkish

TEACHING ACTIVITIES

University	Semester	Course	Sections	Students
Purdue University	Fall 2022	CNIT 421-Mobile Forensics	1	18
	Fall 2022	CNIT 557-Advanced Research Topics in Cyber Forensics	1	3
	Spring 2022	CNIT 48101-Advanced Cyber Forensics	1	4
	Spring 2022	CNIT 525-Mobile and Embedded Device Forensics	1	9
	Fall 2021	CNIT 48101-Advanced Cyber Forensics	1	3
	Fall 2021	CNIT 557-Advanced Research Topics in Cyber Forensics	1	9
	Spring 2021	CNIT 581-Sys Eng For Secure Cyberspace	1	6
	Spring 2021	CNIT 525-Mobile and Embedded Device Forensics	1	12
	Fall 2020	CNIT 420-Basic Cyber Forensics	1	43
	Fall 2020	CNIT 557-Advanced Research Topics in Cyber Forensics	1	9
	Spring 2020	CNIT 420-Basic Cyber Forensics	1	73
	Spring 2020	CNIT 581-Mobile and Embedded Device Forensics	1	13
	Fall 2019	CNIT 420-Basic Cyber Forensics	1	33
	Fall 2019	CNIT 557-Advanced Research Topics in Cyber Forensics	1	5
	Spring 2019	CNIT 471-Vulnerability Analysis And Testing	1	44
	Fall 2018	CNIT 557-Advanced Topics in Cyber Forensics	1	3
Sam Houston State University	Summer 2018	DFSC 5340-Mobile Forensics	1(Onl.)	10
	Spring 2018	DFSC 5325-Network and Cyber Security	1+1(Onl.)	28
	Spring 2018	DFSC 4317-Information Security	1	19
	Fall 2017	DFSC 5327-Digital Forensics Investigations	1+1(Onl.)	14
	Fall 2017	DFSC 3316-Cryptography and Network Security	1	8
	Summer 2017	DFSC 5340-Mobile Forensics	1(Onl.)	9
	Spring 2017	DFSC 5325-Network and Cyber Security	1+1(Onl.)	19
	Spring 2017	DFSC 4317-Information Security	1	17
	Fall 2016	DFSC 5327-Digital Forensics Investigations	1+1(Onl.)	20
	Fall 2016	DFSC 3316-Cryptography and Network Security	1	22
	Summer 2016	DFSC 5340-Social Network Investigation	1(Onl.)	7
	Spring 2016	DFSC 5325-Network and Cyber Security	1+1(Onl.)	15
	Fall 2015	DFSC 5327-Digital Forensics Investigations	1+1(Onl.)	11