

Ahmet Kurt, Ph.D.

Google Scholar  , LinkedIn , GitHub 

Home: Bryan, TX, USA
✉ ahmet.kurt@tamuc.edu

Summary

Research Interests ○ Cybersecurity, IoT, Blockchain, Wireless Networks, Distributed Systems

PLs ○ Python, C++, C (8 years), Bash (5 years), JavaScript, Rust, Go (2 years).

Skills ○ Linux, Latex, Wireshark, ns-3, CLN, Ind, bitcoind, PyCharm, CLion, VSCode, AWS, GCP, Matplotlib, NumPy, SciPy, TensorFlow, Keras, NetworkX, Pandas.

Education

Ph.D. ○ Florida International University, Miami, FL, USA (Advisor: Prof. Kemal Akkaya)
(2019-2023) Major: Electrical and Computer Engineering (Cumulative GPA: **3.92/4.00**)
Dissertation Title: Enabling Third Layer Bitcoin Applications Using Lightning Network

M.Sc. ○ Florida International University, Miami, FL, USA.
(2019-2021) Major: Electrical and Computer Engineering

B.Sc. ○ Antalya Bilim University, Antalya, Turkey.
(2013-2018) Double Major: Computer Engineering & Electrical and Electronics Engineering

Media Appearances

Featured at ○ Forbes , Decrypt 1 , Decrypt 2 , ZenGo , FIU News  and many other smaller sites.

Patents

US 11,755,958 B1 ○ Systems and Methods for Detecting Cryptocurrency Wallet Artifacts in a File System 

















Work Experience

Bryan, TX, USA ○ Texas A&M University-Commerce: Assistant Professor of Computer Science
(Aug 2024-Present) – Joined Texas A&M University-Commerce as an Assistant Professor of Computer Science where I will be teaching courses, doing service and conducting research.

Miami, FL, USA ○ Nethermind: PhD Security Apprentice
(June-Sep 2024) – Working on Ethereum smart contract security audits in Nethermind's security team.

Miami, FL, USA ○ Florida International University: Postdoctoral Associate
(Aug 2023-2024) – Worked on various blockchain, security and wireless networks projects.

Miami, FL, USA ○ Florida International University: Graduate Research and Teaching Assistant
(Jan 2019-July 2023)

- **Crypto Wallet Forensics:** An Advanced Crypto Wallet Artifact Detection Framework. Publication: 1 
 - Designed, implemented and tested a Machine Learning based artifact detection framework for crypto wallets.
- **LNMesh:** First Implementation of True Offline Bitcoin Lightning Payments
 - All code & documentation related to the project:  . Resulting publication: 1 .
 - Tested offline LN payments with WiFi & Bluetooth and implemented a simulator in Python.
- **LNGate & LNGate²:** First Implementation of a 2-party Threshold Lightning Node
 - All code & documentation related to the project:  . Resulting publications: 1 , 2 .
 - This work enables secure LN payments for resource constrained devices using threshold cryptography.
- **LNBot & D-LNBot:** First Botnet on Bitcoin's Lightning Network
 - Some (not all) code related to this project:  . Resulting publications: 1 , 2 .
 - Designed and implemented a covert hybrid botnet running on LN that is extremely hard to stop.
- **Ns-3 Network Simulations:** A Novel Distributed Connectivity Maintenance Algorithm
 - Code:  . Resulting publications: 1 , 2 .
 - Modified ns-3's IEEE 802.11s HWMP protocol and more in C++.
- Instructor for EEL 3712L – Logic Design I Lab. Main TA for EEL 3110 – Circuit Analysis.

Antalya, Turkey ○ Desird Design R&D: Embedded Software Engineer
(Dec 2016-2017) – Developed software for a product using ESP8266 WiFi Modules in C++/Lua.

Istanbul, Turkey ○ Havelsan: Intern
(July-Sep 2017) – Developed a desktop GUI application using QT in C++.

- Bristol, England** (June-Sep 2016)
- **University of Bristol: Erasmus+ Intern** – Contributed to ‘optically reconfigurable microwave switches’ research project.

Honors and Awards

- Awards**
- FIU Dissertation Year Fellowship [🔗](#): Supports highly-qualified final-year doctoral students.
 - Black Hat USA 2021, Student Scholarship [🔗](#): Provides access to all virtual and in-person briefings.
 - RSA 2020 Conference, Security Scholar [🔗](#): Covers full conference pass, travel, accommodation.

Selected Publications

- **A. Kurt**, E. Erdin, K. Akkaya, A. S. Uluagac, M. Cebe, (2023). *D-LNBot: A Scalable, Cost-Free and Covert Hybrid Botnet on Bitcoin’s Lightning Network*, in **IEEE Transactions on Dependable and Secure Computing**, 1-18 [🔗](#).
- **A. Kurt**, A. Sahin, R. Harrilal-Parchment, K. Akkaya, (2023). *LNMesh: Who Said You need Internet to send Bitcoin? Offline Lightning Network Payments using Community Wireless Mesh Networks*, in Proceedings of 2023 IEEE 24rd International Symposium on a World of Wireless, Mobile and Multimedia Networks (**WoWMoM**), 261-270 [🔗](#).
- **A. Kurt**, K. Akkaya, S. Yilmaz, S. Mercan, O. Shlomovits, E. Erdin, (2023). *LNGate²: Secure Bidirectional IoT Micro-payments using Bitcoin’s Lightning Network and Threshold Cryptography*, **IEEE Transactions on Mobile Computing**, 1-17 [🔗](#).
- A. Bhattarai, M. Veksler, A. Sahin, **A. Kurt**, K. Akkaya, (2023). *Crypto Wallet Artifact Detection on Android Devices Using Advanced Machine Learning Techniques*, in Proceedings of International Conference on Digital Forensics and Cyber Crime (**ICDF2C 2022**), 111-132 [🔗](#).
- S. Mercan, **A. Kurt**, E. Erdin, K. Akkaya, (2022). *Cryptocurrency Solutions to Enable Micro-payments in Consumer IoT*, in **IEEE Consumer Electronics Magazine**, 11(2):97-103 [🔗](#).
- **A. Kurt**, S. Mercan, E. Erdin, K. Akkaya, (2021). *3-of-3 Multisignature Approach for Enabling Lightning Network Micro-payments on IoT Devices*, in **ITU Journal on Future and Evolving Technologies**, 2(5):53-67 [🔗](#).
- **A. Kurt**, S. Mercan, O. Shlomovits, E. Erdin, K. Akkaya, (2021). *LNGate: Powering IoT with Next Generation Lightning Micro-payments using Threshold Cryptography*, in Proceedings of the 14th ACM Conference on Security and Privacy in Wireless and Mobile Networks (**WiSec '21**), 117-128 [🔗](#).
- **A. Kurt**, S. Mercan, E. Erdin, K. Akkaya, (2021). *Enabling Micro-payments on IoT Devices using Bitcoin Lightning Network*, in Proceedings of 2021 IEEE International Conference on Blockchain and Cryptocurrency (**ICBC**), 1-3 [🔗](#).
- **A. Kurt**, N. Saputro, K. Akkaya, A. S. Uluagac, (2021). *Distributed Connectivity Maintenance in Swarm of Drones During Post-Disaster Transportation Applications*, in **IEEE Transactions on Intelligent Transportation Systems**, 22(9):6061-6073 [🔗](#).
- **A. Kurt**, E. Erdin, M. Cebe, K. Akkaya, A. S. Uluagac, (2020). *LNBot: A Covert Hybrid Botnet on Bitcoin Lightning Network for Fun and Profit*, in Proceedings of 25th European Symposium on Research in Computer Security (**ESORICS 2020**), 734-755 [🔗](#).
- **A. Kurt**, K. Akkaya, (2020). *Connectivity Maintenance Extensions to IEEE 802.11s MAC Layer in ns-3*, in Proceedings of the 2020 Workshop on ns-3 (**WNS3 '20**), 17-24 [🔗](#).

Languages

- Turkish** ○ Native
- English** ○ Proficient