Linir **Zamir**

BLOCKCHAIN RESEARCHER · SOFTWARE ENGINEER

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"The best way to predict the future is to create it."

Education

Florida Atlantic University (FAU), Boca Raton, FL

PH.D. IN COMPUTER SCIENCE, BLOCKCHAIN CONCENTRATION; ADVISOR: PROF. MEHRDAD NOJOUMIAN   *Aug. 2019 - Aug. 2022*
- Dissertation: "Decentralized Systems for Information Sharing in Dynamic Environment Using Localized Consensus"

M.S. IN COMPUTER SCIENCE; DEAN'S LIST; ADVISOR: PROF. MEHRDAD NOJOUMIAN   *Mar. 2016 - Aug. 2019*
- Thesis: "Application of Blockchain Network for the use of Information Sharing"

Ben-Gurion University of the Negev (BGU), Be'er Sheva, Israel

B.A. IN ECONOMICS; MAGNA CUM LAUDE; ADVISOR: PROF. YANIV ERIKSON   *Mar. 2012 - Dec. 2014*
- Thesis: "Machine Aviation of Micro Aerial Vehicles"

Skills

Programming	C, C++, Python, Java, Javascript, Node.JS, Rust, Web3, Solidity, EVM, TensorFlow, Remix, LaTex
Network	Arduino, RespberryPI, Bluemix-NodeRED, AWS, Azure, Apache, Docker
Topics	Cryptography, Consensus Algorithm, Hyperledger, Robotic Swarm, Machine Learning, Autonomous Units

Experience

Graduate Student Researcher   *Boca Raton, FL*

FLORIDA ATLANTIC UNIVERSITY, DEPARTMENT OF ELECTRICAL ENGINEERING AND COMPUTER SCIENCE   *Aug. 2018 - Aug. 2022*

Autonomous Systems such as Robotic Swarm are required to communicate on a secured protocols to achieve an agreement of operation. The following algorithms were developed as part of the research that explores how autonomous systems can use consensus algorithms to improve operation and achieve an agreement on a set of rules on dynamic environments.

Autonomous Units Consensus Algorithm
- Created a consensus algorithm designed to be implemented in autonomous systems that can verify the communicative data over a malicious environment
- Included trust value and digital signature among other cryptographic primitives to achieve a secured information sharing protocol
- Implemented using RPC written in C and Python. Simulated with ARGoS simulator

Localized State-Change Consensus Algorithm
- Created An algorithm designed to achieve consensus with validation of dynamic environmental data through reputation value. Assures confidentiality, integrity and validity of messages on the blockchain among all users
- Implemented as a sub-ledger on the Hyperledger framework and then analyzed to ensure efficiency, scalability and security
- Maintained good source documentation following good documentation practices

Security Improvements of Blockchain Architecture
- Reviewed and analyzing a large number of known and less-known attacks on consensus algorithms and blockchain architecture
- Built a simulated environment using ARGoS that handles malicious nodes

Teaching Assistant   *Boca Raton, FL*

FLORIDA ATLANTIC UNIVERSITY, DEPARTMENT OF ELECTRICAL ENGINEERING AND COMPUTER SCIENCE   *May. 2022 - Aug. 2022*
- Teaching assistant for Data Structure and Algorithm Analysis: led discussion hours (50 students), held office hours

Software Engineering Intern   *Boca Raton, FL*

TELIT IOT PLATFORMS   *Jul. 2017 - Jan. 2020*
- Supported development and QA for driver development
- Developed projects in C while contributing to deployment by testing, debugging, and resolving issues for optimal results
- Consulted with engineering staff to evaluate interface between hardware and software to develop specifications and performance requirements or resolve customer problems

Special Operations Specialist   *Be'er Sheva, Israel*
IAF, Iɴᴛᴇʀɴᴀᴛɪᴏɴᴀʟ Aᴠɪᴀᴛɪᴏɴ   *Aug. 2013 - Jul. 2016*
- Led team focused on analyzing and deploying new technology in aviation strategic capabilities
- Implemented complex scenarios of operation as a training platform in hostile environment

Publications

Pᴜʙʟɪsʜᴇᴅ Aʀᴛɪᴄʟᴇs [4]

Localized State-Change Consensus in Immense and Highly Dynamic Environments
  Linir Zamir, Mehrdad Nojoumian
  Cryptography 6.2 (2022) p. 23. MDPI
  ᴜʀʟ: `https://www.mdpi.com/2410-387X/6/2/23`   2022

Information sharing in the presence of adversarial nodes using raft
  Linir Zamir, Mehrdad Nojoumian
  Proceedings of the Future Technologies Conference
  ᴜʀʟ: `https://ieeexplore.ieee.org/abstract/document/9651979`   2021

ISRaft consensus algorithm for autonomous units
  Linir Zamir, Aman Shaan, Mehrdad Nojoumian
  2021 IEEE 29th International Conference on Network Protocols (ICNP)
  ᴜʀʟ: `https://link.springer.com/chapter/10.1007/978-3-030-89912-7_13`   2021

Application of Blockchain Network for the Use of Information Sharing
  Linir Zamir
  Florida Atlantic University, Masters Thesis (2019)
                                                                                . 2019

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Roadmap of Post-Quantum Cryptography Standardization: Side-Channel Attacks and Countermeasures
  Ari Shaller, Linir Zamir, Mehrdad Nojoumian
  Cryptography 7 (2022). MDPI
                                                                                2022

Consensus Algorithms - A Comprehensive Survey
  Linir Zamir
  (2022). IEEE
                                                                                2022

A Survey of Countermeasures for Well Known Blockchain Mining Attacks
  Linir Zamir, Pouya Pourtahmasbi, Mehrdad Nojoumian
  (2022). IEEE
                                                                                2022

Honors, Awards & Recognition

2018	**1st Place**, FAU Hackathon (IBM + IEEE)	*Boca Raton, FL*
2018	**FAU President Honor's List**, Florida Atlantic University	*Boca Raton, FL*
2014	**Performance Award Certificate**, IAF, Aviation	*Be'er Sheva, Israel*
2013	**Certificate of Excellence**, IAF, Aviation	*Be'er Sheva, Israel*
2020	**IEEE Young Professional**, Member	*Online*
2016	**Tau Beta Pi Engineering Honor Society**, Member	*Boca Raton, FL*