

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 NOJOUIMAN

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 NOJOUIMAN

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, RaspberryPI, 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

Boca Raton, FL

TELIT IOT PLATFORMS

Jan. 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

IAF, INTERNATIONAL AVIATION

- 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

Be'er Sheva, Israel

Aug. 2013 - Jul. 2016

Publications

PUBLISHED ARTICLES [4]

Localized State-Change Consensus in Immense and Highly Dynamic Environments

Linir Zamir, Mehrdad Nojournian

Cryptography 6.2 (2022) p. 23. MDPI

URL: <https://www.mdpi.com/2410-387X/6/2/23>

2022

Information sharing in the presence of adversarial nodes using raft

Linir Zamir, Mehrdad Nojournian

Proceedings of the Future Technologies Conference

URL: <https://ieeexplore.ieee.org/abstract/document/9651979>

2021

ISRaft consensus algorithm for autonomous units

Linir Zamir, Aman Shaan, Mehrdad Nojournian

2021 IEEE 29th International Conference on Network Protocols (ICNP)

URL: 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

UNDER SUBMISSION [3]

Roadmap of Post-Quantum Cryptography Standardization: Side-Channel Attacks and Countermeasures

Ari Shaller, Linir Zamir, Mehrdad Nojournian

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 Nojournian

(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

MEMBERSHIPS

2020 **IEEE Young Professional**, Member

Online

2016 **Tau Beta Pi Engineering Honor Society**, Member

Boca Raton, FL