MOLUD ESMAILI

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RESEARCH INTERESTS

- Blockchain networks' performance evaluation
- Green blockchains
- Performance modeling and simulation
- Queue theory
- Data analytics and visualization
- Software-defined networking (SDN)
- Optimization and evolutionary algorithms

EDUCATION

- **University of South Florida,** Tampa, US (Jan 2023-Present)
  Ph.D. in Computer Science, Supervisor: Dr. Ken Christensen, GPA: 4/4
  - Conducting **performance analysis**/stress testing on Algorand blockchain to evaluate block time, block size, and throughput during periods of intense network stress.
  - Working on modifying **Bitcoin's** consensus mechanism, proof-of-work, to create a **greener blockchain** ecosystem.
  - Analyzing the performance and transaction characteristics of public permissionless blockchains, including **Bitcoin**, **Algorand**, and **Ethereum 2.0**, using **simulation**, **data analytics**, and **modeling** approaches.
  - Reviewed performance modeling approaches used in **public permissionless blockchains**.
- Shiraz University of Technology, Shiraz, Iran (2018-2020)
  M.Sc. in Computer Networks Engineering, GPA: 3.7/4
- Hamedan University of Technology, Hamedan, Iran (2013-2017)
  B.Sc in Information Technology Engineering

SKILLS

- **Programming:** Python, C/C++, MATLAB
- **Data Science:** Power BI, NumPy, Pandas, Matplotlib, Seaborn, Plotly
- **Blockchain:** Bitcoin, Ethereum, Algorand, Swarm, IPFS, Consensus mechanisms
- **Simulator:** GN3, NS2,VMware, Wireshark, Cooja, Cisco packet tracer, BlockSim, SimBlock, CSim
- **Network:** SDN, MPLS, Wireless
- **SDN:** Mininet, Opendaylight
- **IoT:** Contiki, Cooja
- **Web:** HTML5, Wordpress
- **Database:** SQL, Access
- **Document preparation:** Microsoft Word, Latex
- **OS:** Linux, Windows

PUBLICATIONS

- **A distributed blockchain-based video sharing system with copyright, integrity, and immutability**
  M. Esmaili*, R. Javidan, IEEE Congress on Fuzzy and Intelligent Systems (CFIS).*
- **A P2P file sharing market based on blockchain and IPFS with dispute resolution mechanism**
  K. Ahmadi, ***M. Esmaili****, IEEE International Conference on Artificial Intelligence, Blockchain, and Internet of Things.*
- **Performance modeling of public permissionless blockchains: A survey**
  M. Esmaili*, K. Christensen, under review/ submitted in ACM Computing Surveys, 2024.*

TEACHING EXPERIENCE

- Penetration testing for IT**,** UG course, USF, Spring 2023, fall 2023, spring 2024
- Computer info networks for IT, UG course, USF, summer 2023
- Computer networks lab for IT, UG course, USF, summer 2023, fall 2023, spring 2024
- Computer networks, UG course, Sutech, Fall 2018

NOTABLE PROJECTS

- **Distributed file sharing market based on blockchain** 2023
  Deployed a file-sharing marketplace web3 application using IPFS and Ethereum smart contracts.
- **A distributed blockchain-based video sharing system** 2020
- Deployed a blockchain based video sharing system using Ethereum and Swarm distributed storage.
- **Implementation and evaluation of selected MPLS network using GNS3** 2019
- **Simulation and evaluation of selected wifi network using NS2 and Wireshark** 2019
- **Programming, simulation, and evaluation of selected IoT systems Using Contiki and Cooja** 2019
- **Implementation and evaluation of software defined network using Mininet and OpenDaylight** 2018
- **Design and implementation of an automation system for students' information using Access** 2017
- **Community detection in social networks based on evolutionary algorithms** 2016
  Using MATLAB, Multi-objective Optimization, Evolutionary and Memetic algorithms, and Clustering approaches.
- **Implementation of library automation and database system using SQL** 2015