Morteza Shoushtari

Ph.D. in Electrical and Computer Engineering
U.S. permanent resident (Green card holder)

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Summary

Recent Ph.D. graduate in Electrical and Computer Engineering with over 5 years of expertise in wired/wireless networking and network security. Proficient in LAN, WLAN, and WWAN communication systems, with hands-on experience in implementing and maintaining network devices. Possesses in-depth knowledge of networking protocols and procedures, demonstrating a strong understanding of network issues and troubleshooting. Successfully automated a complex system, leading to a significant reduction in overhead costs. A detail-oriented professional with a proven track record of creative thinking and critical problem-solving skills.

Interests

- Wired/Wireless Networking
- Cellular Communication
- Network Security (Cryptography, Post-Quantum Cryptosystems, Physical Layer Security)
- Error-Correction Coding (Turbo, Polar, LDPC, and Viterbi algorithm)

Education

Ph.D., in Electrical and Computer Engineering (ECE),
Brigham Young University, Utah, USA
Dissertation title: "Securing Wireless Communication via Information-Theoretic Approaches: Innovative Schemes and Code Design Techniques."

- Years: 2019 - 2023
- GPA: 3.78/4

M.Sc., Information Technology (IT),
Shiraz University, Shiraz, IRAN

- Years: 2011 - 2013

B.Sc., Computer Engineering (CE),
Sadjad University of Technology, Mashhad, IRAN

- Years: 2006 - 2010

Skills

- Comprehensive understanding of wired/wireless/cellular communications, protocols, and procedures.
- Hands-on experience on network device configuration.
- Extensive knowledge of network security, cryptographic algorithms, and PLS.
- Familiarity with cloud computing technologies and procedures.
- Proficient in researching and solving problems innovatively.
- Strong ability to work both in a team and independently.

Work Experiences

Brigham Young University, UTAH, USA **Jan 2019 - July 2023**
Graduate Research Assistant

- Discovered new properties of secret error-correcting coding from the perspectives of information and coding theory.
- Devised a high-speed algorithm to construct the optimal code in Nested Linear Secrecy Codes, enhancing code identification and selection efficiency.
- Conducted a detailed assessment and visualized secrecy problems such as eavesdropping in aeronautical mobile telemetry communication and suggested the use of secrecy coding

and specialized version of post-quantum cryptosystems for this type of communication systems.

IT Dep. HUAWEI Company, Tehran, Iran **Aug 2016 - Aug 2017**
IT Administrator

- Managed communication networks, monitored network performance and resolved any technical issues that arose.
- Provided first-level support to more than 250 employees.
- Performed installations and configurations of various network devices such as switches, wireless access points, cameras, and video conferencing systems.

IT Dep. JYAN Company, Tehran, Iran **Jan 2016 - Aug 2016**
Network Engineer

- Managed communication networks, monitored network performance and resolved any technical issues that arose.
- Delivered first-level support to more than 180 employees.
- Performed installations and configurations of various network devices such as switches, wireless access points, cameras, and video conferencing systems.

IT Dep. Persia Cloud Company, Tehran, Iran **Jun 2015 - Jan 2016**
Network Engineer

- Administered IAAS and PAAS layer of the company's cloud platforms (2X, IIRAS).
- Managed the company's Microsoft application servers (CRM, SharePoint, Lync).

Selected Publication

- "Optimizing Finite Blocklength Nested Linear Codes: Using the Worst Code to Find the Best Code", in Proc. Entropy Journal, MDPI, 2023.
- "Towards Practical Physical-Layer Security: Channel Measurements and Pedestrian Traffic", under review in Proc. IEEE Transactions on Information Theory, 2023.
- "Classification of Coset Codes for Wiretap Channels", under review in Proc. IEEE Transactions on Information Theory, 2023.
- "From Privacy Protection to Analyzing Users' Behavior: The Crucial Role of Information Theory in the Metaverse", IEEE Inter-mountain Engineering, Technology, and Computing Conference, 2023.
- "Secrecy Coding for the Binary Symmetric Wiretap Channel via Linear Programming", under review in Proc. IEEE Transactions on Information Forensics and Security, 2023.
- "A Comparative Study of Waveforms Across Mobile Cellular Generations: From 0G to 5G and Beyond", under review in Proc. IEEE Access, 2023.
- "Post-Quantum Cryptography Based on Codes: A Game Changer for Secrecy in Aeronautical Mobile Telemetry" in Proc. of the International Telemetry Conference (ITC), Las Vegas, NV, US, Oct. 2022.
- "Secrecy coding in the Integrated Network Enhanced Telemetry (iNET)" in Proc. of the International Telemetry Conference (ITC), Las Vegas, NV, US, Oct. 2021.
- "New Dual Relationships for Error-Correcting Wiretap Codes" in Proc. of IEEE Information Theory Workshop (ITW), Kanazawa, Japan, Oct. 2021.
- "On Caching with Finite Blocklength Coding for Secrecy over the Binary Erasure Wiretap Channel" in Proc. of IEEE Wireless Telecommunications Symposium (WTS), San Francisco, US, Apr. 2021.

Awards and Honors

- Third place award, IEEE Intermountain Engineering, Technology, and Computing Conference (IEEE i-ETC), 2023.
- Best paper award, International Telemetry Conference, 2022.

- Second best graduate student paper award, International Telemetry Conference, 2021.
- Member of IEEE Communication Society (ComSoc).
- Member of IEEE Information Theory Society (ITSoc).
- Outstanding IT engineer in Huawei Technologies Company, 2017.

Certificates and Other Skills

- Network certificate:
  - o CompTIA A+
  - o Network+
  - o CCNA (Cisco Certified Network Associate)
  - o MCITP (Microsoft Certified IT Professional)
  - o HCNA (Huawei Certified Network Associate)
- Knowledgeable about:
  - o Cellular protocol stack (control plane, data plane, NAS/RRC/PDCP/RLC/MAC/PHY)
  - o 5G and LTE features
  - o Wired/Wireless network architecture, infrastructure, and protocols
  - o Cloud Computing (AWS, Google Cloud)
  - o Routing and switching protocols (BGP, EIGRP, OSPF, RIP, IS-IS, MPLS)
  - o Network monitoring and troubleshooting
  - o Hands-on experience in network device configuration (switches, APs, etc.)
  - o IoT protocols and features.
  - o Network analyzer tools (Wireshark, SolarWinds)
  - o Security concepts (cryptosystems, attacks, vulnerabilities, standards)
  - o Programming languages such as C++/Matlab
  - o Windows server administration
  - o Network documentation and reporting
- Other skills:
  - o Highly detailed-oriented
  - o Innovative problem-solving abilities

References

Available upon request.