

Morteza Shoushtari

Ph.D. in Electrical and Computer Engineering

U.S. permanent resident (green card holder)

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SUMMARY

I completed my Ph.D. in Electrical and Computer Engineering from Brigham Young University (BYU) in 2023, specializing in physical layer security and error correction coding in wireless communications. Prior to pursuing my Ph.D., I gained six years of work experience in the tech industry, working as an IT administrator at Huawei Technologies Co., and as a network engineer at JYANE Construction Co. and Persia Cloud Co.

INTERESTS

- Cellular Networks (5G, LTE)
- Network Security (Cybersecurity, Quantum Cryptography, Physical Layer Security)
- Wireless and IoT Communication
- Cloud Computing
- Network Architecture
- Network Performance Optimization
- Error-Correction Coding (Turbo, Polar, LDPC, and Viterbi algorithms)

EDUCATION

Ph.D., Computer Engineering

Dissertation title: “Securing Wireless Communication via Information-Theoretic Approaches: Innovative Schemes and Code Design Techniques”

Brigham Young University, Utah, USA

- Years: 2019 - 2023
- GPA: 3.74/4

M.Sc., Information Technology (IT)

Shiraz University, Shiraz, IRAN

- Years: 2011 - 2013

B.Sc., Computer Engineering

Sadjad University of Technology, Mashhad, IRAN

- Years: 2006 - 2010

WORK

EXPERIENCES

Brigham Young University, UTAH, USA

Jan 2019 - present

Graduate Research Assistant

- RA with a focus on physical layer security and secrecy/error-correction codes in wireless communication.

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 routers, switches, wireless access points, cameras, and video conferencing systems.

IT Dep. JYAN Company, Tehran, Iran

Jan 2016 - Aug 2016

Network Engineer

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

IT Dep. Persia Cloud Company, Tehran, Iran

Jun 2015 - Jan 2016

Network Engineer

- Installed and configured IAAS and PAAS cloud platforms (2X, IIRAS).
- Installed and configured Microsoft Servers (CRM, SharePoint, Lync).

IT Dep. LOTUS Company, Tehran, Iran

Nov 2013 - Jun 2015

Website Developer

- Developed and managed the company's website (lotuslaptop.com).

IT Dep. KARMA Engineering Company, Iran

Nov 2011 - Nov 2013

Technical Support

- Managed communication networks and troubleshooted technical issues.
- Delivered level 1 technical support to more than 50 clients.

SELECTED
PUBLICATION

- **Morteza Shoushtari** and Willie Harrison, "Optimizing Finite Blocklength Nested Linear Codes: Using the Worst Code to Find the Best Code", under review in Proc. IEEE Transactions on Information Forensics and Security, 2023.
- Farah Arabian, **Morteza Shoushtari**, and Michael Rice "A Comparative Study of Waveforms Across Mobile Cellular Generations: From 0G to 5G and Beyond", under review in Proc. IEEE Access, 2023.
- Ethan Angerbauer, **Morteza Shoushtari**, Kalin Norman, Benjamin Jensen, Willie Harrison, and Michael Rice "Towards Practical Physical-Layer Security: Channel Measurements and Pedestrian Traffic", under review in Proc. IEEE Transactions on Information Theory, 2023.
- Truman Welling, Andrew Swain, **Morteza Shoushtari**, Elise Beard and Willie Harrison, "Classification of Coset Codes for Wiretap Channels", under review in Proc. IEEE Transactions on Information Theory, 2023.
- **Morteza Shoushtari**, Farah Arabian and Willie Harrison, "From Privacy Protection to Analyzing Users' Behavior: The Crucial Role of Information Theory in the Metaverse", in Proc. IEEE Intermountain Engineering, Technology, and Computing Conference (i-ETC), 2023.
- Ali Nikkhah, **Morteza Shoushtari**, Bahareh Akhbari, and Willie Harrison, "Secrecy Coding for the Binary Symmetric Wiretap Channel via Linear Programming", under review in Proc. IEEE Transactions on Information Forensics and Security, 2023.
- **Morteza Shoushtari**, Farah Arabian and Willie Harrison, "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.
- **Morteza Shoushtari** and Willie Harrison, "Secrecy coding in the Integrated Network Enhanced Telemetry (iNET)" in Proc. of the International Telemetry Conference (ITC), Las Vegas, NV, US, Oct. 2021.
- **Morteza Shoushtari** and Willie Harrison, "New Dual Relationships for Error-Correcting Wiretap Codes" in Proc. of IEEE Information Theory Workshop (ITW), Kanazawa, Japan, Oct. 2021.
- Willie Harrison and **Morteza Shoushtari**, "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, Intermountain Engineering, Technology, and Computing Conference (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
SKILLS

- Network certificate:
 - CompTIA A+
 - Network+
 - CCNA (Cisco Certified Network Associate)
 - MCITP (Microsoft Certified IT Professional)
 - HCNA (Huawei Certified Network Associate)
- Experience and knowledge in:
 - 5G and LTE protocol stack
 - Network architecture, infrastructure, and protocols (DNS, DHCP, NAT)
 - Cloud Computing (AWS, Google Cloud, Citrix Cloud)
 - Routing protocols (BGP, EIGRP, OSPF, RIP, MPLS)
 - Network monitoring and troubleshooting
 - Network device configuration
 - Wireless networks (WiFi, 802.15.4)
 - Network management tools (Wireshark, SolarWinds)
 - Security concepts (cryptosystems, attacks, vulnerabilities, standards)
 - Programming languages such as C++/Python/Matlab
 - Windows server administration
 - Network documentation and reporting
- Other skills:
 - Highly detailed-oriented
 - Innovative problem-solving abilities

REFERENCES

Available upon request.