

# MUSLUM OZGUR OZMEN

## EDUCATION

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| JAN 2020 — PRESENT    | <b>Ph.D. in Computer Science</b><br>4.00/4.00<br>Dr. Z. Berkay Celik<br>Purdue University        | West Lafayette, IN, USA |
| SEPT 2016 — JUNE 2018 | <b>MSc in Computer Science</b><br>3.96/4.00<br>Dr. Attila Altay Yavuz<br>Oregon State University | Corvallis, OR, USA      |
| SEPT 2012 — JUNE 2016 | <b>BS in Electrical and Electronics Engineering</b><br>3.49/4.00<br>Bilkent University           | Ankara, Turkey          |

## TEACHING EXPERIENCE

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### Guest Lecturer:

- CS426 Computer Security, Purdue University, Spring 2023
- CS590 IoT & CPS Security, Purdue University, Spring 2022

### Teaching Assistant:

- CS496 - Mobile and Cloud Software Development, Oregon State University, Winter 2018
- CS261 - Data Structures, CS/ECE578 - Cyber-security, Oregon State University, Fall 2017
- CS492 - Mobile Software Development, Oregon State University, Winter 2017

## PUBLICATIONS

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### Peer-reviewed conference publications:

- C21 **Muslum Ozgur Ozmen**, Ruoyu Song, Habiba Farrukh and Z. Berkay Celik. *Evasion Attacks on Smart Home Physical Event Verification and Defenses*. Network and Distributed System Security Symposium (NDSS) 2023.
- C20 Habiba Farrukh\*, **Muslum Ozgur Ozmen**\*, Kerem Ors and Z. Berkay Celik. *One Key to Rule Them All: Secure Group Pairing for Heterogeneous IoT Devices*. IEEE S&P 2023. – equally contributed.
- C19 **Muslum Ozgur Ozmen**\*, Habiba Farrukh\*, Hyungsub Kim, Antonio Bianchi and Z. Berkay Celik. *Rethinking Secure Pairing in Drone Swarms*. VehicleSec 2023. – equally contributed.
- C18 Hyungsub Kim, **Muslum Ozgur Ozmen**, Z. Berkay Celik, Antonio Bianchi and Dongyan Xu. *PatchVerif: Discovering Faulty Patches in Robotic Vehicles*. Usenix Security 2023.
- C17 Khaled Serag, Rohit Bhatia, Akram Faqih, **Muslum Ozgur Ozmen**, Vireshwar Kumar, Z. Berkay Celik, Dongyan Xu. *ZBCAN: A Zero-Byte CAN Defense System*. Usenix Security 2023.
- C16 **Muslum Ozgur Ozmen**, Xuansong Li, Andrew Chu, Z. Berkay Celik, Bardh Hoxha and Xiangyu Zhang. *Discovering IoT Physical Channel Vulnerabilities*. ACM Conference on Computer and Communications Security (ACM CCS) 2022.

- C15 Hyungsub Kim, **Muslum Ozgur Ozmen**, Z. Berkay Celik, Antonio Bianchi and Dongyan Xu. *PGPATCH: Policy-Guided Logic Bug Patching for Robotic Vehicles*. IEEE S&P 2022.
- C14 Andrew Chu, Arjun Arunasalam **Muslum Ozgur Ozmen** and Z. Berkay Celik. *Behind the Tube: Exploitative Monetization of Content on YouTube*. Usenix Security 2022.
- C13 Hyungsub Kim, **Muslum Ozgur Ozmen**, Antonio Bianchi, Z. Berkay Celik and Dongyan Xu. *PGFUZZ: Policy-Guided Fuzzing for Robotic Vehicles*. Network and Distributed System Security Symposium (NDSS) 2021.
- C12 Furkan Goksel\*, **Muslum Ozgur Ozmen\***, Michael Reeves, Basavesh Shivakumar and Z. Berkay Celik. *On the Safety Implications of Misordered Events and Commands in IoT Systems*. IEEE Workshop on the Internet of Safe Things (SafeThings) 2021. – equally contributed.
- C11 Rouzbeh Behnia, Attila A. Yavuz, **Muslum Ozgur Ozmen** and Tsz Hon Yuen. *Compatible Certificateless and Identity-Based Cryptosystems for Heterogeneous IoT*. International Conference on Information Security (ISC) 2020.
- C10 Efe U. A. Seyitoglu, Attila A. Yavuz and **Muslum Ozgur Ozmen**. *Compact and Resilient Cryptographic Tools for Digital Forensics*. IEEE Conference on Communications and Network Security (IEEE CNS) 2020. **(Best Paper Award Finalist)**
- C9 **Muslum Ozgur Ozmen**, Attila A. Yavuz and Rouzbeh Behnia. *Energy-Aware Digital Signatures for Embedded Medical Devices*. IEEE Conference on Communications and Network Security (IEEE CNS) 2019.
- C8 Rouzbeh Behnia, **Muslum Ozgur Ozmen** and Attila A. Yavuz. *ARIS: Authentication for Real-Time IoT Systems*. International Conference on Communications (IEEE ICC) 2019.
- C7 **Muslum Ozgur Ozmen**, Rouzbeh Behnia and Attila A. Yavuz. *Fast Authentication from Aggregate Signatures with Improved Security*. Financial Cryptography and Data Security (FC) 2019.
- C6 Rouzbeh Behnia, **Muslum Ozgur Ozmen**, Attila A. Yavuz and Mike Rosulek. *TACHYON: Fast Signatures from Compact Knapsack*. ACM Conference on Computer and Communications Security (ACM CCS) 2018.
- C5 **Muslum Ozgur Ozmen** and Attila A. Yavuz. *Dronecrypt-An Ultra-Low Energy Cryptographic Framework for Small Aerial Drones*. Military Communications Conference (IEEE MILCOM) 2018.
- C4 **Muslum Ozgur Ozmen** and Attila A. Yavuz. *Compact Energy and Delay-Aware Authentication*. IEEE Conference on Communications and Network Security (IEEE CNS) 2018.
- C3 **Muslum Ozgur Ozmen**, Thang Hoang and Attila A. Yavuz. *Forward-Private Dynamic Searchable Symmetric Encryption with Efficient Search*. International Conference on Communications (IEEE ICC) 2018.
- C2 **Muslum Ozgur Ozmen** and Attila A. Yavuz. *Low-Cost Standard Public Key Cryptography Services for Wireless IoT Systems*. Workshop on Internet of Things Security and Privacy (IoT S&P) 2017 (Affiliated with ACM CCS).
- C1 Rouzbeh Behnia, Attila A. Yavuz and **Muslum Ozgur Ozmen**. *High-Speed High-Security Public Key Encryption with Keyword Search*. IFIP Annual Conference on Data and Applications Security and Privacy (DBSec) 2017.

## Peer-reviewed journal publications:

- J3 Attila A. Yavuz and **Muslum Ozgur Ozmen**. *Ultra Lightweight Multiple-time Digital Signature for the Internet of Things Devices*. IEEE Transactions on Services Computing (IEEE TSC), 2019.
- J2 Thang Hoang, **Muslum Ozgur Ozmen**, Yeongjin Jang and Attila A. Yavuz. *Hardware-Supported ORAM in Effect: Practical Oblivious Search and Update on Very Large Dataset*. Proceedings on Privacy Enhancing Technologies (PoPETS), 2019.
- J1 Rouzbeh Behnia, **Muslum Ozgur Ozmen** and Attila A. Yavuz. *Lattice-Based Public Key Encryption with Keyword Search from Experimental Perspectives*. IEEE Transactions on Dependable and Secure Computing (IEEE TDSC), 2018.

## PATENTS

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- P3 Rouzbeh Behnia, **Muslum Ozgur Ozmen** and Attila A. Yavuz. *Efficient Identity-Based and Certificateless Cryptosystems*, US Patent 10,673,625
- P2 Attila A. Yavuz, **Muslum Ozgur Ozmen** and Rouzbeh Behnia. *Energy-aware Digital Signatures*, US Patent 10,547,455
- P1 Thang Hoang, **Muslum Ozgur Ozmen**, and Attila A. Yavuz *Forward-Private Dynamic Searchable Symmetric Encryption with Efficient Search*, US Patent 10,922,273

## PRESENTATIONS

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### Invited Talks:

- I2 *Compositional Safety and Security Reasoning in IoT Environments*. University of California Santa Cruz. Virtual, February 2023.
- I1 *Lightweight, Delay-Aware and Scalable Cryptographic Services for Smart-Grid Systems*. Cyber Resilient Energy Delivery Consortium (CREDC) Pacific Northwest Industry Workshop. Richland, WA, USA, November 2017.

### Conference and Workshop Talks:

- T7 *Evasion Attacks on Smart Home Physical Event Verification and Defenses*. Network and Distributed System Security Symposium (NDSS). San Diego, CA, USA, March 2023.
- T6 *Discovering IoT Physical Channel Vulnerabilities*. ACM Conference on Computer and Communications Security. Los Angeles, CA, USA, November 2022.
- T5 *Energy-Aware Digital Signatures for Embedded Medical Devices*. IEEE Conference on Communications and Network Security. Washington, DC, USA, June 2019.
- T4 *Fast Authentication from Aggregate Signatures with Improved Security*. Financial Cryptography and Data Security. St Kitts and Nevis, February 2019.
- T3 *TACHYON: Fast Signatures from Compact Knapsack*. ACM Conference on Computer and Communications Security. Toronto, ON, Canada, October 2018.
- T2 *Forward-Private Dynamic Searchable Symmetric Encryption with Efficient Search*. IEEE International Conference on Communications. Kansas City, MO, USA, May 2018.
- T1 *Low-Cost Standard Public Key Cryptography Services for Wireless IoT Systems*. Workshop on Internet of Things Security and Privacy. Dallas, TX, USA, November 2017.

### **Program Committee Member:**

- SafeThings 2023
- RICSS 2023

### **Reviewer:**

- IEEE Internet of Things Journal - 2022
- Journal of Complex & Intelligent Systems - Springer, 2021
- IEEE Transactions on Services Computing - 2020
- IEEE Access - 2019
- Journal of Ambient Intelligence and Humanized Computing - Springer, 2018

### **External Reviewer:**

- IEEE S&P 2023
- Usenix Security 2022, 2023
- NDSS 2022, 2023
- CCS 2021
- ACSAC 2017, 2018, 2019, 2022
- WWW 2019
- DBSec 2017, 2018, 2019

## AWARDS AND HONORS

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- Recipient of NDSS 2023 Travel Grant (1,550\$).
- Recipient of IEEE CNS 2019 Travel Grant (1,250\$).
- Sharpeye - Acoustic Localization of Gunshot, funded by The Scientific and Technological Research Council of Turkey, 2016.
- Turkish Educational Foundation, Outstanding Success Scholarship (awarded to 50 students nationwide), September 2013 — June 2016.