Faik Kerem Ors

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Education

Purdue University — West Lafayette, IN, US
Ph.D. in Computer Science — *Aug. 2022 – Present*
***CGPA**: 4.00/4.00, **Initial Academic Advisor**: Z. Berkay Celik*

Sabancı University — Istanbul, Turkey
M.Sc. in Computer Science and Engineering — *Sep. 2019 – Jan. 2022*
***CGPA**: 3.87/4.00, **Thesis Advisor:** Prof. Albert Levi*
***Thesis**: Data Driven Intrusion Detection for 6LoWPAN Based IoT Systems*

Sabancı University — Istanbul, Turkey
B.Sc. in Computer Science and Engineering, Minor in Mathematics — *Sep. 2014 – June 2019*
CGPA**: 3.86/4.00, **Ranked 3rd

Research Interests

IoT security and privacy; wireless network security; web security; systems and software security; privacy of machine learning applications; adversarial machine learning.

Research Experience

Research Intern — June 2020 – June 2021
Purdue University - GoBoiler Internship Program (Selected Attendee) — *West Lafayette, IN, USA*

- Implemented a secure and robust context-based sensor pairing scheme in the smart home context.
- Accepted to IEEE S&P (Oakland) 2023, second cycle.
- Worked remotely due to COVID-19 circumstances under the supervision of Dr. Z. Berkay Celik.

Summer Research Intern — June 2018 – Sep. 2018
Technical University of Berlin — *Berlin, Germany*

- Implemented deep learning models (e.g., LSTMs) to optimize the bitrate selection decision on DASH clients.
- Reviewed the literature and delivered an overview presentation on Dynamic Streaming over HTTP (DASH).
- Attended M.Sc. lectures and seminars especially on content delivery techniques.
- Supervisors: Dr. Suzan Bayhan and Prof. Abdel-Karim Al-Tamimi

Publications

- Habiba Farrukh*, Muslum Ozgur Ozmen*, **Faik Kerem Ors**, Z. Berkay Celik. One Key to Rule Them All: Secure Group Pairing for Heterogeneous IoT Devices. IEEE Security and Privacy (S&P '23).
- **Faik Kerem Ors**. Data Driven Intrusion Detection for 6LoWPAN Based IoT Systems. *M.Sc. Thesis*, December 2021.
- **Faik Kerem Ors**, Mustafa Aydın, Aysu Boğatarkan, and Albert Levi. Scalable Wi-Fi Intrusion Detection for IoT Systems. In *11th IFIP International Conference on New Technologies, Mobility and Security (Security Track)*, Paris, France, April 2021.
- **Faik Kerem Ors**, Süveyda Yeniterzi and Reyyan Yeniterzi. Event Clustering within News Articles, In *Proceedings of the Workshop on Automated Extraction of Socio-political Events from News 2020*, pages 63–68, Marseille, France, May 2020. European Language Resources Association (ELRA). (Proposed system ranked 1st in the shared task).

Conference Presentations

- Scalable Wi-Fi Intrusion Detection for IoT Systems. In *11th IFIP International Conference on New Technologies, Mobility and Security (Security Track)*, Paris, France, April 2021.
- Event Clustering within News Articles, In *Proceedings of the Workshop on Automated Extraction of Socio-political Events from News 2020*, pages 63–68, Marseille, France, May 2020. European Language Resources Association (ELRA).

Teaching Experience

Teaching Assistant Aug. 2022 – Present
Purdue University *West Lafayette, IN, US*

- Held office hours, prepared and graded assignments and projects.
- Courses (reverse chronological): Computer Security (CS 426; Spring 2023), Security Analytics (CS 529; Fall 2022)

Teaching Assistant Feb. 2018 – Jan. 2022
Sabancı University *Istanbul, Turkey*

- Held office hours, conducted lab sessions and supervised student projects and assignments.
- Courses (reverse chronological): Computer Networks (CS 408; 2022, 2021, 2020), Computer and Network Security (CS 432), Machine Learning (CS 412), Advanced Programming (CS 204), Database Systems (CS 306)

Services

- Reviewer in ITU Journal on Future and Evolving Technologies (ITU J-FET) – 2022
- Reviewer in IEEE International Conference on Communications (ICC) – 2022
- Reviewer in IEEE Conference on Communications and Network Security (CNS) – 2021
- Reviewer in The Computer Journal (Oxford University Press) – 2020, 2021

Honors and Awards

- Tuition waiver and Graduate Teaching Assistantship offer by Purdue University for graduate studies (2022 – 2027).
- Full tuition waiver and stipend by Sabancı University for graduate studies (2019 – 2021).
- Dean's High Honor List, Sabancı University (2016 – 2019).
- Recipient of Sakıp Sabancı Encouragement Scholarship, which covers 100% of tuition fee, because of academic excellence (2016 – 2019).

Technical Skills

Programming Languages: Python, C++, C, C#, Java, SQL
Frameworks and Libraries: Pandas, NumPy, Scikit-learn, Keras, PyTorch (basic), Tensorflow (basic), Flask, Django
Operating Systems: Unix, Linux, Windows
Technologies: git, MySQL, PostgreSQL, Docker, Azure, JUnit, Android Studio
Tools: Wireshark, Metasploit, Hashcat, Burp Suite, Nmap, SQLmap, Wfuzz, IDA, Binwalk, The Harvester, Dirbuster

Additional Work Experience

R&D Engineer Feb. 2019 – Aug. 2019
PRODAFT Cyber Intelligence and Cyber Security Services *Istanbul, Turkey*

- Implemented a machine learning based phishing detection system from scratch.
- Developed RESTful microservices to be integrated into the threat intelligence ecosystem of the company.

Security Research Intern July 2017 – Sep. 2017
PRODAFT Cyber Intelligence and Cyber Security Services *Istanbul, Turkey*

- Worked on penetration testing and developed penetration testing tools in Python.

Selected Projects

Commonsense Validation and Explanation Oct. 2019 – Feb. 2020

- Applied state-of-the-art transformer-based NLP models (e.g., BERT, ALBERT and RoBERTa) on the commonsense validation and explanation task (Task 4) conducted as part of SemEval 2020.
- My model that utilizes pre-trained ALBERT has been ranked 11th out of 39 submissions officially.

Neural Online Signature Verification System Oct. 2019 – Feb. 2020

- Implemented an online signature verification system leveraging siamese networks on SUSIG database.
- Our model achieved 94% accuracy on the test set that consists of 450 genuine, 1000 skilled forgery and 900 random forgery signatures which were tested against the reference signatures in the form of an input pair.