

M. Caner Tol

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EDUCATION

Worcester Polytechnic Institute Ph.D. in Electrical and Computer Engineering Advisor: Prof. Berk Sunar	Worcester, MA 2019–Current
M.S. in Electrical and Computer Engineering	2019–2022
Middle East Technical University B.S. in Electrical and Electronics Engineering	Ankara, TR 2014–2019

PROFESSIONAL EXPERIENCE

Research and Teaching Assistant Vernam Lab, Worcester Polytechnic Institute	Worcester, MA 2019 - Current
– Research on ML applications of GAN, Transformer models, and other NLP techniques on Microarchitectural side-channel attacks and time series data, and fault attacks on ML models.	
Hardware Security Intern NVIDIA	Remote - Santa Clara, CA May 2022 - Aug 2022
– Research on automatic detection of side-channel vulnerabilities on CUDA libraries.	
Part Time Security Engineer Network Security Team, Aselsan	Ankara, TR Nov 2018 - Mar 2019
– Assisted on network security management, malware detection and identification using YARA rules in the Network Security Team of Aselsan (Military Electronic Industries) which is the top company in the defense industry in Turkey.	
Student Computer Assistant Middle East Technical University	Ankara, TR Sep 2016 - Nov 2018
– Operated local IT office in the Faculty of Economics and Administrative Sciences.	
Research Intern Vernam Lab, Worcester Polytechnic Institute	Worcester, MA June 2018 - Sep 2018
– CNN, SVM, and Auto-Encoder model hyperparameter search for website fingerprinting task.	
Engineering Intern Voltage Performance and Standby Lab, Arçelik A.Ş.	Istanbul, TR Jul 2017 - Sep 2017
– Developed a MATLAB GUI to automate voltage performance test procedure using image processing.	

SKILLS

Programming:	Python, C/C++, CUDA, ARM/x86 Assembly
Libraries:	PyTorch, TensorFlow, Keras
Tools:	LaTeX, Git, VS Code

LANGUAGES

Turkish:	Native speaker
English:	Fluent
Italian:	Elementary

RESEARCH

- K. Mus, Y. Doroz, **M. C. Tol**, K. Rahman, and B. Sunar, “Jolt: Recovering TLS Signing Keys via Faults”, [*Under Review*].
- M. C. Tol**, Saad Islam, B. Sunar, and Ziming Zhang, “Toward Realistic Backdoor Injection Attacks on DNNs using Rowhammer”, [*Under Review*].
- M. C. Tol**, B. Gulmezoglu, K. Yurtseven, and B. Sunar, “FastSpec: Scalable Generation and Detection of Spectre Gadgets Using Neural Embeddings”, in *Proceedings of the 2021 IEEE European Symposium on Security and Privacy, Vienna, Austria, 2021*.
- L. Amorós, S. M. Hafiz, K. Lee, and **M. C. Tol**, “Gimme That Model!: A Trusted ML Model Trading Protocol”, *Protecting Privacy through Homomorphic Encryption, 2021*.
- B. Gulmezoglu, A. Zankl, **M. C. Tol**, S. Islam, T. Eisenbarth, and B. Sunar, “Undermining User Privacy on Mobile Devices Using AI”, in *Proceedings of the 2019 ACM Asia CCS, Auckland, New Zealand, 2019*.

TEACHING

Teaching Assistant, Worcester Polytechnic Institute

Computer Architecture - ECE505	Fall 2020
Analysis of Deterministic Signals and System - ECE504	Fall 2020
Introduction to Communications and Networks - ECE2305	Spring 2019
Computer Organization and Design - ECE4801	Spring 2019

SCHOLARSHIPS AND AWARDS

Student Travel Grant <i>IEEE Symposium on Security and Privacy</i>	Jun 2021
Microsoft Private AI Bootcamp <i>Microsoft Research, Privacy Preserving Machine Learning</i>	Dec 2019
IoT Application Award <i>The Senior Engineering Design Course Committee, METU EE</i>	Jun 2019
Honor Student <i>Middle East Technical University</i>	Jun 2019
College Scholarship Mersin METU Alumni Association	2017 - 2019
569th place in 1.9 Million in General University Exam <i>Council of Higher Education, Republic of Turkey</i>	Jun 2013

ACTIVITIES

Member (Dance) <i>WPI Ballroom Dance Club</i>	2019–Current
Election Observer (Politics) <i>Vote and Beyond</i>	2014–2019
President and Erasmus+ Project Coordinator (Sports & Culture) <i>METU Aikido Club</i>	2015–2017