# Roozbeh Siyadatzadeh

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Leiden University

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## Research Interests

• Machine Learning on Embedded Systems • In-Memory Computing

## Education

**• Leiden University** — Leiden, The Netherlands
*Ph.D. Computer Science (Project: **NeuroSoC**)* — *November 2022 - Present*
**Advisors:** Dr. Todor Stefanov / Prof. Nele Mentens

**• Sharif University of Technology** — Tehran, Iran
*M.Sc. Computer Architecture* — *September 2020 - August 2022*

**• Persian Gulf University** — Bushehr, Iran
*B.Sc. Computer Engineering* — *September 2016 - August 2020*

## Research & Publication

- **R. Siyadatzadeh**, F. Mehrafrooz, N. Mentens and T. Stefanov , "P2W: From Power Traces to Weights Matrix - An Unconventional Transfer Learning Approach," to appear In Proc. "41st ACM/SIGAPP Symposium on Applied Computing (SAC'26)", pp., Thessaloniki, Greece, Mar. 23-27, 2026.
- **R. Siyadatzadeh**, F. Mehrafrooz, N. Mentens and T. Stefanov , "TraceFormer: A Transformer-Based Method for Weight Extraction from IMC Tiles," In Proc. "28th Euromicro Conference on Digital System Design (DSD'25)", pp. 635-642, Salerno, Italy, Sept. 10-12, 2025.
- F. Mehrafrooz, **R. Siyadatzadeh**, N. Mentens and T. Stefanov , "A Security Analysis of CNN Partitioning Strategies for Distributed Inference at the Edge," to appear In Proc. "15th International Conference on Security, Privacy and Applied Cryptographic Engineering (SPACE'25)", pp., IIT Guwahati, India, Dec. 16-19, 2025.
- **R. Siyadatzadeh**, F. Mehrafrooz, M. Ansari, B. Safaei, M. Shafique, J. Henkel and A. Ejlali, " ReLIEF:A Reinforcement Learning-Based Real-Time Task Assignment Strategy in Emerging Fault-Tolerant Fog Computing," IEEE Internet of Things Journal, vol. 10, no. 12, pp. 10752-10763, 15 June15, 2023
- M. Ansari, S. Safari, A. Yeganeh-Khaksar, **R. Siyadatzadeh**, P. Gohary-Nazari, H. Khdr, A. Ejlali, M. Shafique and J. Henkel, "ATLAS: Aging-Aware Task Replication for Multicore Safety-Critical Systems," 2023 IEEE 29th Real-Time and Embedded Technology and Applications Symposium (RTAS), San Antonio, TX, USA, 2023, pp. 223–234
- S. Yari-Karin, **R. Siyadatzadeh**, M. Ansari and A. Ejlali, "Passive Primary/Backup-based Scheduling for Simultaneous Power and Reliability Management on Heterogeneous Embedded Systems," in IEEE Transactions on Sustainable Computing, vol. 8, no. 1, pp. 82-93, 1 Jan.-March 2023

## Projects

- **NeuroSoC** | Supported by European Union (NeuroSoC project - Horizon Europe Grant Agreement n°101070634) | *Assessment of a Multi-Processor System-on-Chip Using High-Density Embedded Phase Change Memory (PCM) Cell Process Technology* | *October 2022 – Present*
- **Thermal Management and Task Scheduling for a Multi-Core System** | *Python, Gem5, HotSpot, McPAT* | *June 2021*
- **Reinforcement Learning-Based Dynamic Voltage and Frequency Scaling (DVFS) Manager for Multicore Platforms** | *Python, Sniper-sim, HotSpot, McPAT* | *December 2020*
- **Distributed Implementation of Keras Framework for Prediction** | *Python, gRPC* | *February 2020*
- **Sentiment Analysis on Social Media Comments Using Machine Learning** | *TensorFlow* | *August 2019*

## Teaching Experience

**Lab Instructor, Embedded Systems and Software**
*Instructed by Dr. T.P. Stefanov, Leiden University* *Spring 2024, Spring 2025*

**Teaching Assistant, Fundamentals of Digital Systems Design**
*Instructed by Dr. T.P. Stefanov, Leiden University* *Fall 2023, Fall 2024*

## Technical Skills

**Programming languages:** Rust, C, C++, Java, Python, Julia, Clojure(Script), Assembly
**Machine learning tools**: TensorFlow, PyTorch, OpenCV
**Miscellaneous:** Lex, Yacc, Bison, gRPC, MySQL, Microsoft SQL Server, MongoDB, MATLAB, Git, Vim, Linux

## Language Skills

**English:** Professional working proficiency
**Dutch:** A2 Elementary proficiency
**Persian:** Native proficiency

*References, further information, and proofs are available upon request.*