



Naveed Ul Mustafa

Education

- February 2019 **PhD in "Computer Engineering"**, *Bilkent University*, Ankara, Turkey.
- September 2011 **M.Sc in "System on Chip Design"**, *Royal Institute of Technology (KTH)*, Stockholm, Sweden.
- October 2006 **B.Sc in "Computer Engineering"**, *University of Engineering and Technology*, Taxila, Pakistan.

Research interest

Computer architecture, Persistent memory (System, Hardware support and Security), Distributed persistency, Memory hierarchy and memory systems

Professional Work Experience

1. **Post Doctoral Researcher** at ARPERS group, Department of Computer Science, University of Central Florida (UCF), Orlando, FL, USA, Jan 2021 to date.
2. **Assistant Professor** at Computer Engineering department of TED University, Ankara, Turkey, Sep 2019 to Dec 2020.
3. **Instructor** at Computer Engineering department of Ozyegin University, Istanbul, Turkey, Sep 2018 to Aug 2019.
4. **Three month internship** at Movidius-Intel, Dublin, Ireland from Nov 2016 to Jan 2017.
5. **Three month internship** at Barcelona Supercomputing Center, Spain from Aug 2015 to Nov 2015.
6. **Teaching assistant** for various courses at Bilkent University including Senior Design Project, Digital Design, Computer Organization, Programming Languages from Sept 2012 to August 2018.
7. **Seven month industrial MS thesis work** at ENEA, Stockholm and Mälardalen University, Vasteras, Sweden from Feb 2011 to Aug 2011.

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8. **Lecturer** at National University-Foundation for Advancement of Sciences and Technology, Islamabad, Pakistan from Feb 2007 to July 2009 and Oct 2011 to Feb 2012.
9. **Three month internship** at National Defense Complex, Islamabad, Pakistan from Sep 2006 to Nov 2006.

Publications

Journals

Persistent Memory Security Threats to Inter-Process Isolation, [Naveed UI Mustafa](#), Yan Solihin, in IEEE Micro, April 10, 2023.

Exploiting architectural features of a computer vision platform towards reducing memory stalls, [Naveed UI Mustafa](#), Martin J O'Riordan, Stephen Rogers, Ozcan Ozturk, in Journal of Real-Time Image Processing (JRTIP), 2018.

Peer-reviewed Conferences

PMO Checker: A Framework for Protecting Persistent Memory Objects Against New Security Attacks, [Naveed UI Mustafa](#), Xipeng Shen, Yan Solihin, under review at ACM International Conference on Architectural Support for Programming Languages and Operating Systems (ASPLOS), 2024.

LOaPP: Improving the performance of Persistent Memory Objects via Low-Overhead at-rest PMO Protection, Derrick Greenspan, [Naveed UI Mustafa](#), Mark Heinrich, Yan Solihin, to appear in IEEE International Symposium on Secure and Private Execution Environment Design (SEED), 2024.

Hardware Support for Durable Atomic Instructions for Persistent Parallel Programming, Khan Shaikhul Hadi, [Naveed UI Mustafa](#), Mark Heinrich, Yan Solihin, in proceedings of 60th Design and Automation (DAC) conference, 2023.

Improving the Security and Programmability of Persistent Memory Objects, Derrick Greenspan, [Naveed UI Mustafa](#), Zoran Kolega, Mark Heinrich, Yan Solihin, in proceedings of 2nd IEEE International Symposium on Secure and Private Execution Environment Design (SEED), 2022.

Seeds of SEED: New Security Challenges for Persistent Memory, [Naveed UI Mustafa](#), Yuan-chao Xu, Xipeng Shen, Yan Solihin, in proceedings of 1st IEEE International Symposium on Secure and Private Execution Environment Design (SEED), 2021.

Implications of non-volatile memory as primary storage for database management systems, [Naveed UI Mustafa](#), Adrià Armejach, Ozcan Ozturk, Adrián Cristal, Osman S Unsal, in proceedings of International Conference on Embedded Computer Systems: Architectures, Modeling and Simulation (SAMOS) 2016, Samos, Greece.

Monitoring Capabilities of Schedulers in Model-Driven Development of Real-Time Systems, Mehrdad Saadatmand, Mikael Sjödin, [Naveed UI Mustafa](#), in proceedings of 17th IEEE International Conference on Emerging Technologies & Factory Automation (ETFA 2012), Krakow, Poland.

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Concept and Design of Exhaustive-Parallel search algorithm to support Quality-of-service in Network-on-Chip, Meganathan Deivasigamani, Shaghayeghsadat Tabatabaei, Naveed Mustafa, Hamza Ijaz, Haris Bin Aslam, Shaoteng Liu, Axel Jantsch, in proceedings 24th IEEE International SOC Conference (SOCC 2011), Taipei, Taiwan.

Workshops

On Inter-PMO Security Attacks, Naveed UI Mustafa, Yan Solihin, under review at in 15th Non Volatile Memory Workshop (NVMW), 2024.

Hardware Support for Durable Atomic Instructions for Persistent Parallel Programming, Khan Shaikhul Hadi, Naveed UI Mustafa, Khan Shaikhul Hadi, Yan Solihin, under review at in 15th Non Volatile Memory Workshop (NVMW), 2024.

Security in Era of Persistent Memory, Naveed UI Mustafa, Yuanchao Xu, Xipeng Shen, Yan Solihin, in 14th Non Volatile Memory Workshop (NVMW), 2023.

A brief primer on Persistent Memory Objects, Derrick Greenspan, Naveed UI Mustafa, Zoran Kolega, Mark Heinrich, Yan Solihin, in 14th Non Volatile Memory Workshop (NVMW), 2023.

Adaptive Routing Framework for Network on Chip Architectures, Naveed UI Mustafa, Ozcan Ozturk, Smail Niar, in 8th Workshop on Rapid Simulation and Performance Evaluation: Methods and Tools 18 Jan 2016, Prague, Czech Republic.

Ph.D. thesis *Reducing processor-memory performance gap and improving network-on-chip throughput*. To view the thesis, please follow the link <http://hdl.handle.net/11693/49641>

M.Sc. thesis *Enriching Enea OSE for Better Predictability Support*. To view the thesis, please follow the link <http://urn.kb.se/resolve?urn=urn:nbn:se:kth:diva-38824>

Teaching Experience

1. **University of Central Florida (UCF), Orlando, FL** CDA5106, Advanced Computer Architecture (Fall 2021)
2. **TED University, Ankara, Turkey** Computer Organization (Fall/Spring 2020, Fall 2019), Microprocessors (Fall 2020), Fundamentals of Programming I (Spring 2020), Fundamentals of Programming II (Fall 2019)
3. **Özeygin University, Istanbul, Turkey** Computer Programming for Engineers (Summer/Spring/Fall 2019), Engineering Computation (Summer/Spring 2019), Introduction to Programming (Summer 2019)

Professional Responsibilities

Member program committee of 14th Annual Non-Volatile Memory Workshop (NVMW'24), 2024.

Member program committee of IEEE International Symposium on Secure and Private Execution Environment Design (SEED), 2024.

Reviewer for IEEE Micro, 2023.

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Web-chair for International Symposium on Computer Architecture (ISCA), 2023.

Chair for the 6th session in 1st IEEE International Symposium on Secure and Private Execution Environment Design (SEED), 2021.

Scholarships and Grants

Post-Doctoral research grant awarded by University of Central Florida (UCF), annually, from 2021 to present.

HiPEAC grant for 3 months Industrial PhD Internship at Movidius-Intel, August 2016, Dublin, Ireland.

HiPEAC collaboration grant for 3 months research at Barcelona Super Computing Center (BSC), July 2015, Spain.

PhD Scholarship for four years awarded by Higher Education Commission (HEC) of Pakistan, Fall 2012-2013.

MS Thesis grant by a European project called CHESS for thesis work at MDH in Vasteras and ENEA in Kista, Stockholm, Sweden, 2011.

Languages

English **Fluent**
Urdu **Native Speaker**
Punjabi **Native Speaker**
Turkish **Fluent**