Suleiman *Abu Kharmeh*

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Profile

Suleiman Abu Kharmeh currently works as a digital design and verification consultant with Ericsson in Stockholm. Suleiman has recently worked on other projects with Intel in Villach and also in Dresden, NXP in Hamburg, Renesas Electronics in Dusseldorf and STMicroelectronics in Grenoble. Currently he focuses on digital systems design and verification using VHDL, Verilog, SystemVerilog, UVM and occasionally UPF. Tools used are mainly Cadence NCSIM, Synopsys VCS, Design Compiler and SpyGlass. Suleiman has a PhD in Computer Architecture, during which he was part of the Microelectronics Research Group at the University of Bristol/UK. Between contracts, he enjoys his research work in the field of formal hardware design and complexity analysis as well as lecturing in Computer Architecture and Logic Design.

Professional Background Highlights

Ericsson   Stockholm, Sweden
Digital Design and Integration Consultant   *Jan/2019 – to-date*

- Implementation of ASIC SoC memory control system in VHDL.
- Performance and power optimizations.
- Synthesis and Static Timing Analysis (STA) using Design Compiler.
- Design analysis, lint and optimization of SoC blocks using SpyGlass.

Intel Labs Europe   Villach, Austria
Digital Design and Verification Consultant   *Oct/2016 – Dec/2018*

- Implementation of 10G EPON Physical Coding Sublayer data path in VHDL.
- Synthesis and Static Timing Analysis (STA) using Intel Quartus.
- Performance optimization for mapping on FPGA with 322MHz, 32bit pipeline (10.3125Gbps).
- Assertion based verification in VHDL.
- System modelling and verification in Verilog, SystemVerilog and UVM.

Renesas Electronics Europe GmbH   Dusseldorf, Germany
Digital Design and Verification Consultant   *Jan. 2016 – June 2016*

- Specification and implementation of test-bench architecture using SystemVerilog.
- Integration of VMM Verification IP into the verification flow.
- Test cases and functional coverage implementation using SystemVerilog.

Intel Mobile and Communications GmbH   Dresden, Germany
Digital Design and Verification Consultant   *Jun. 2014 – Nov. 2014*

- Implementation, integration and verification of low-power controller in VHDL, IP-XACT and UPF.
- Defining, implementing and monitoring low power coverage plan using C, Verilog, TCL, VCS-NLP and DVE.

Technical Training

Doulos Training Centre   Ringwood, UK
Advanced VHDL   *Dec. 2018*

- Use of VHDL for large hierarchical designs and design re-use.
- The creation of powerful test environment.
- Gate level simulations.

FirstEDA Limited   Basingstoke, UK
Intermediate VHDL   *Dec. 2017*

- Practical experience in writing, testing and synthesis of VHDL code.
- FPGA synthesis and testing using Intel/Altera Quartus tool chain.

Doulos Training Centre   Ringwood, UK
Universal Verification Methodology (UVM) Adopter Class   *Sep. 2015*

- Training in advanced SystemVerilog methodologies using UVM
- Topics covered include: Functional Coverage, Random Stimulus Generation and UVM Code Generator.

Skills

- Technical Skills
  - Hardware Design and Implementation: VHDL, Verilog, SystemVerilog, UPF and IP-XACT.
  - Verification and Model-Checking methodologies and tools: UVM, VCS, MVSIM/NLP, ModelSim, Quartus.
  - Microcontrollers: Intel 8086 family, Altera NiosII, XMOS XCore and Microchip PIC.
  - Other Languages: Compilers, code generators, C++, Assembly languages, Java.
  - Scripting Languages: Shell programming, TCL and Make.
  - Revision Control: PerForce, ClearCase, SVN, Git and CVS.
  - Operating Systems: Linux and Windows.

- Core Skills
  - Target Driven: Determined and attentive to details while keeping the target in sight.
  - Calm and Collected: Able to work efficiently under pressure.
  - Effective Communicator: Competent in both verbal and written communications.
  - Enthusiastic, Positive and optimistic at all times.

Academic Background

PhD, University of Bristol
Computer Architecture

Bristol, UK
Jan. 2008 – Sep. 2013

- Thesis date: Aug. 2012
- Thesis title: Formal Complexity-Oriented Performance-Critical Design and Verification Framework.

MSc with Distinction, University of Bristol
Advanced Microelectronics Systems Engineering

Bristol, UK
Oct. 2006 – Sep. 2007

- Dissertation: Research and Implementation of Security Requirements of the XCore processor.
- Selected Subjects: **Advanced Computer Architecture, Design Verification, System Integration, Digital System, Embedded Real Time Systems and Advanced Language Engineering.**

An-Najah National University
Bachelor of Computer Engineering

Nablus, Palestine
Sep. 2000 – Dec. 2005

- Final GPA: High Good (86.5%)

Publications

[1] Suleiman Abu Kharmeh. *Formal Complexity-Oriented Performance-Critical Design and Verification Framework*. PhD thesis, University of Bristol, 2012.

[2] Suleiman Abu Kharmeh, Kerstin Eder, and David May. A Design-for-Verification Framework for a Configurable Performance-Critical Communication Interface. In *Proc. 9th Int. Conf. Formal Modeling and Anal. of Timed Syst.*, pages 335–351. Springer, August 2011.

[3] Suleiman Abu Kharmeh, Kerstin Eder, and David May. Formal Analysis of a Programmable Performance-Critical Processor Communication Interface. In *Proc. 10th AVoCS Int. Workshop*, 2010.

[4] Suleiman Abu Kharmeh and Simon Hollis. Reconfigurable High-speed Asynchronous I/O Ports for Flexible Protocol Support. In *Proc. 20th UK Asynchronous Forum*, 2008.

[5] Suleiman Abu Kharmeh. Research and Implementation of Security Requirements of the XCore Processor. Master's thesis, University of Bristol, 2007.

[6] Andrew Lynch, Suleiman Abu Kharmeh, John Barton, Brendan O'Flynn, Philip Angove, and S C O Mathuna. Design and characterisation of a wireless inertial measurement unit for integration to a wireless network scenario. In *Proc. Information Technology and Telecommunications Conf.,* pages 245–247, Cork Institute of Technology, Ireland, 2005.

Seminars

[1] Suleiman Abu Kharmeh. A Design-for-Verification approach of a Configurable Performance-Critical Concurrent Communication Interface. Department of Computer Science, University of Oxford, February 2011.

Hobbies & Activities

- Swimming, Weights, Cycling and Rowing