MEHMET ALPER USLU, PHD.

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Profile

High achieving Hardware and Software Design Manager experienced in the technical leadership of multiple projects complemented with a UK Tier 1 exceptional talent visa that allows working without the need for sponsorship from companies. Recognised for performance having received an endorsement from Royal Academy of Engineering and having been granted a Visiting Scholar Award from the University of Massachusetts Lowell, USA in 2012.

An influential project leader who can motivate, educate and bridge the gap to achieve results by building long-term and mutually beneficial internal & external stakeholder relationships. Excellent communication and analytical skills, with a proven ability to seize opportunities, whilst building long lasting trust, and mutual respect at all levels. Selected as Associate Editor at IEEE Access Journal.

Skills

- Embedded Software Design
- Technical Project Management
- RF/Microwave Design
- Hardware Design
- ARM
- Microcontrollers
- PCB Design
- Electrical Engineering
- Electronics
- Telecommunications
- Software Development
- Algorithms
- Verilog
- Stakeholder Management
- Matlab
- Embedded Software
- FPGAs
- Advanced Design System
- C (Programming Language)
- Real-Time Operating Systems (RTOS)

Career Overview

NETAS Telecommunications **2017 to Present**
Hardware and Embedded Software Design Manager

- Managed and planned project resources including budget, schedules, cost estimations and managed risks.
- Utilised JIRA / Kanban Board to prepare project plans and planned/defined the scope of projects.
- Planned work flow, assessed priorities, allocated timescales and distributed work per level of expertise required.
- Reviewed deliverables to ensure schedules were maintained, while meeting with quality standards, endorsing changes to plans where applicable.
- Used Confluence to produce both technical and production documents.
- Reviewed code on Crucible and monitored the quality of embedded software and hardware.
- Maintained strong stakeholder relationships, influenced decisions and ensured effective communication through all project stages.
- Successfully defined system architecture.

Projects Summary in this position:

Structural health monitoring system project Aug 2019
Technical Lead

- Developed signal processing firmware including FFT, LPF FIR Filtering for ARM as well as firmware for ADXL355 accelerometer over SPI protocol.
- Aligned activities to established business processes, protocols and quality standards.
- Designed antenna and transceiver PCBs of SHM hardware.

- Led the project team, monitored performance and ensured the consistent achievement of project deliverables.

BLE inventory tracking project Jan 2019
Technical Lead
- Designed an antenna and transceiver PCBs of beacon unit.
- Gathered requirements and ensured these were accepted and approved by stakeholders.
- Developed firmware for the beacon unit, designed BLE Gateway and developed Python based software to relay BLE packets to central network software.

Smart Lighting Project May 2018 to Apr 2019
Technical Leader
- Organized meeting with electronic component providers.
- Designed and tested flyback AC/DC converter.
- Designed and tested DALI slave circuit.
- Designed control and communication circuit that supports both NFC and LoRa.
- Developed middleware for energy metering with STPM32.
- Designed PCB Antenna.
- Developed middleware for communication peripherals.

Remote water meter reading system design project Jan 2017 to Mar 2018
Technical Leader
- Mentored a team of 5 and led an investigation into inductive sensing.
- Designed and inductive sensor that detected a rotating metal disc on water meters.
- Developed embedded software that implemented the LoRaWAN stack and investigated Low Power Wide Area Aetwork) architectures before producing a pros and cons report.
- Designed a PCB of all system that contained Inductive sensor, main microcontroller, LoRa chipset and other components including flash and regulator.

BLE+Lorawan module design project Jan 2018 to Jun 2018
Technical Leader
- Led the design of a LoRa transceiver circuit that supported both Class A and Class C by using Semtech's SX1272.
- Designed/tested PCB of the module and designed a mobile app to control module via Bluetooth.
- Successfully re-modified a LoRaWAN stack to run with Nordic's NRF52 series Bluetooth MCUs

Lorawan gateway project Nov 2018
Technical Lead
- Led the successful implementation of a spectrum scan feature.
- Designed 8 channel LoRaWAN gateway communication circuit that included configurable output power up to +27 dBm.
- Maintained excellent relationships with colleagues at all levels to facilitate quality work, effectiveness and efficiency.

Building infrastucture modeling (bimy) project Nov 2017
Project Leader
- Produced approved partnership and cooperation agreement.
- Maintained strong stakeholder relationships and ensured regular progress updates throughout the project.

NETAS Telecommunications **2015 to 2017**
Hardware and Embedded Software Team Leader
- Supervisory responsibility for teams and ensured the achievement of project objectives regarding hardware and embedded software design.
- Used Jira and Kanban to prepare project plan and task assignments.
- Prepared project proposal for Horizon 2020 as well as for Turkish Local Funding Agency (TUBITAK) projects.

Projects Summary in this position:

MU Smart key finder project Jan 2016 to Jan 2017
Technical Lead
- Led a team of 2 on the investigation of Bluetooth LE architecture and successfully created the feature requirement specification (FRS) document.

- Designed the antenna and transceiver PCB and developed firmware for Texas Instrument's CC2640.

X-Band surveillance radar project Jan 2015 to Jan 2016
Technical Lead

- Successfully designed an antenna array that included a microstrip patch antenna element and simulated its performance via CST Microwave Studio.
- PCBs for transmitter, receiver and antenna as well as an antenna array with microstrip patch antenna element and simulated its performance via CST Microwave Studio.
- Conducted coupling, cross talk EMC compliance simulations with CST Microwave Studio.

NETAS Telecommunications **2012 to 2015**
Senior Embedded Software Design Engineer

- Developed new features to Kapsch CarrierCom's Mobile Switching Center (MSC).
- Prepared project documents, reviewed code and prepared detailed design document.
- Delivered coaching and mentoring to colleagues regarding best practice and best approach.

Projects Summary in this position:

An interface over IP (AOIP) handover enhancements Jan 2014 to Jan 2015

- Successfully coded Kapsh MSC to support IP based handover.
- Produced feature description document and created test plan document and test cases.

An interface over IP (AOIP) high level design Aug 2013 to Jan 2014

- Performed analysis of the GSM-R system architecture and specified enhancements required to apply to convert existing TDM based speech links to IP based ones.

35 dispatcher enhancements per group call Jan 2013 to Aug 2013

- Produced the test plan, test cases, tested the developed feature and collected test reports.
- Successfully sourced patch from an older release of Kapsch MSC.

Education

2012 to 2016: PHD., Dogus University, Electronics and Communications Engineering, PHD. Thesis: Diffraction Modeling with numerical methods
2010 to 2012: MSc, Dogus University, Electronics and Communications Engineering, MSc. Thesis: Scattering field analysis of non-penetrable 2D wedge using HFA Techniques and FDTD method.
2005 to 2010: BSc, Dogus University, Electronics and Communications Engineering
B.Sc. Thesis: Designing transmitter and receiver for 1.5 GHz AM modulated signals.

Professional Development

Oracle Certified Associate, Java SE 7 Programmer
Oracle – 08.2015

Awards:

Leopold B. Felsen Excellence in Electromagnetics
Dogus University Institute of Science and Technology First Prize
University of Massachusetts Lowell Visiting Scholar

Memberships:

IEEE

Publications

Journal:

M.A. Uslu, G Apaydin, L. Sevgi, " Finite Difference Time Domain Modeling of Fringe Waves", Antennas and

Propagation, Applied Computational Society Magazine, 2017.
A. Sefer, M.A. Uslu, L.Sevgi, "MATLAB-Based 3-D MoM and FDTD Codes for the RCS Analysis of Realistic Objects," IEEE Antennas and Propagation Magazine, Vol:57, Issue:4, pp.122-148, Aug. 2015.
M.A. Uslu, G Apaydin, L. Sevgi, " Diffraction Modeling by a Soft-Hard Strip: Finite Difference Time Domain vs. Method of Moments", IEEE Antennas and Wireless Propagation Letters, 2016
M.A. Uslu, G Apaydin, L. Sevgi, "Double Tip Diffraction Modeling: Finite Difference Time Domain vs. Method of Moments", Antennas and Propagation, IEEE Transactions on, Oct. 2014.
G. Toroğlu, M.A. Uslu, L. Sevgi, "RCS2D: A 2D MoM and FDTD based Scattering Simulator", International Journal of RF and Microwave Computer-Aided Engineering Wiley July 2013.

G. Toroğlu, M.A. Uslu, L. Sevgi, "RCS2D: A 2D Scattering Simulator for MoM vs. FDTD Comparisons", ACES, Int Journal on Applied Computational Electromagnetics Vol:28, Issue:3, pp.173-177, March 2013.
M. A. Uslu, L. Sevgi, "Matlab-Based Virtual Wedge Scattering Tool for the Comparison of High Frequency Asymptotics and FDTD Method," ACES, Int Journal on Applied Computational Electromagnetics Vol:27, Issue:9, pp.697-705, Sep. 2012.
M. A. Uslu, L. Sevgi, Matlab-Based Filter Design Program: From Lumped Elements to Microstriplines, IEEE Antennas and Propagation Magazine, Vol:53, Issue:1, pp.213-224, Feb. 2011.
F. Hacıvelioglu, M. A. Uslu, L. Sevgi, A MatLab-based Virtual Tool for the Electromagnetic Wave Scattering from a Perfectly Reflecting Wedge, IEEE Antennas and Propagation Magazine, Vol:53, Issue:6, pp.234-243, Dec. 2011.

International Conferences:

M.A. Uslu, G. Apadın, L.Sevgi, "EMC/EMI Problems and Diffraction Modeling: Finite Difference Time Domain vs. Method of Moments", EMC'14 Tokyo / Tokyo Japan
G. Toroğlu, M.A. Uslu, L. Sevgi, "RCS2D: A 2D MoM and FDTD based Scattering Simulator", ACES 2013 / California USA
G. Toroğlu, M.A. Uslu, L. Sevgi, "RCS2D: 2D Electromagnetic Simulator based on MoM and FDTD", MMS 2012 / Istanbul
M. A. Uslu, L. Sevgi, "FDTD Modeling of Electromagnetic Wave Scattering from a Non-Penetrable Wedge," APEMC 2012 / Singapore
M. A. Uslu, L. Sevgi, "Modeling and Simulation of Electromagnetic Wave Diffraction: High Frequency Asymptotics vs. FDTD" MMS 2012, Mediterranean Microwave Symposium, Dogus University – Istanbul, September 2012
M. A. Uslu, L. Sevgi, "MATLAB Based Filter Design Program: From Lumped Elements to Microstriplines," EMC Europe 2011, York/UK

National Conferences:

M. A. Uslu, L. Sevgi, "Birinci ve İkinci mertebe Maxwell Denklemlerine dayalı FDTD Simülasyonları ve Kamadan Saçılma Problemi", 2. Ulusal EMC Konferansı, Işık Üniversitesi / Istanbul, September 2013
Kama'dan Kırınım Probleminin Modellenmesi: FDTD – MoM Karşılaştırmaları, 2. Ulusal EMC Konferansı, Işık Üniversitesi / Istanbul, September 2013
M. A. Uslu, L. Sevgi, "Zamanda Sonlu Farklar Yöntemiyle Kanonik Kama'dan Saçılma Probleminin Modellenmesi," SAVTEK, OTÜ – Ankara, June 2012
M. A. Uslu, L. Sevgi, "İletim Hatlarından Mikroşeritlere Filtre Tasarımı – 1. Ulusal EMC Konferansı, Doğuş Üniversitesi / Istanbul, September 2011

References

Prof. Dr. Levent SEVGI (IEEE Fellow)
Prof. Dr. Ercan TOPUZ