Fatih Emre Simsek

Ankara/Turkey 🏠

+90 505 804 8283 📞

simsekfe@gmail.com ✉

fatih-emre-şimşek-msc-a962572a 💼

Objective

As highly motivated and future potential electronics engineer, with strong analytical and research skills, I am an embedded software design engineer. I have currently been working on embedded Linux systems such as NVIDIA Jetson TX2. In the past, I mostly worked in FPGA business by designing PCBs and FPGAs. My areas of interests are Video and Signal processing on FPGA and GPUs.

Education

SEPTEMBER 2017 - PRESENT

Doctor of Philosophy in Electronics Engineering/ Gebze Technical University, Kocaeli

- Aselsan Academy
- GPA: 3.50/4.00
- PhD Qualification Exam: Passed
- Tentative Thesis Topic: Multi Object Tracking

  Projects:
- AAR671 Advanced Computer Architecture: Analysis and optimization of BoomV1 architecture (Super scalar)
- ELE510 Advanced Digital Logic Design: Instruction Set Extension for a RISC-V CPU

SEPTEMBER 2010 – SEPTEMBER 2013

Master of Science in Electrical and Electronics Engineering/ Bilkent University, Ankara

- GPA: 3.03/4.00
- **Thesis:** Finite Element Method Based Simulations of Low Frequency Magnetic Field in Seawater.

  Projects:
- EEE530 Digital Communication Theory: Pulse Design for GSM/EDGE. Pulse shape for binary pulse amplitude modulation with f_c:1.8Ghz and max pulse duration: 40 microseconds
- CS551 Pattern Recognition: Optimizing K value of Expectation Maximization initialization

SEPTEMBER 2005 – SEPTEMBER 2010

Bachelor of Science in Electrical and Electronics Engineering/ Bilkent University, Ankara

- GPA: 3.04/4.00

  Projects:
- EEE492 Senior Project II: Non-parametric position estimation techniques (k-NN and support vector)
- EEE491 Senior Project I: Underwater Acoustic Telephone. Building and testing an underwater acoustic telephone for voice communication

---

Experience

FEBRUARY 2019 – PRESENT

Embedded Software Design Engineer / Aselsan Inc., Ankara

Embedded Linux Systems Design:
- U-Boot + Linux Kernel + Device Tree Blob + Root File System
- Beagle Bone Black TI AM335x
- NVIDIA Jetson Tx2

Microcontroller Design:
- TI MSP430
- PIC 18F

SEPTEMBER 2016 – FEBRUARY 2019
Senior Digital Design Engineer / Aselsan Inc., Ankara

Technical duties:
- Maintenance and development of FPGAs for more than six projects
- Design of video and signal processing algorithms on FPGA for Thermal (IR), Nigh Vision and Day-TV cameras in VHDL/Verilog
- Design of high speed data transfer interfaces such as 1Gbps/100Mbps Ethernet, PCI-express and XAUI
- Design of low speed communication interfaces such as UART, SPI, I2C and BISS in VHDL/Verilog

Managerial duty:
- Leading ten FPGA design engineers

FEBRUARY 2013 – SEPTEMBER 2016
Digital Design Engineer / Aselsan Inc., Ankara

- Owned full-cycle development of FPGAs including implementation, functional verification, synthesis, static timing analysis and board level integration
- Joined schematic and layout design for a 18-20 layer PCB consisting of at least 100 different individual components

Board level debug of boards:
- High speed transceivers SFP, XFP and high speed interfaces 10G/XAUI, XFI, SFI
- Camera interface board containing Cyclone V FPGA, LVDS transceivers, RS422 transceivers, 100Mbps Ethernet (RGMII phy), LPDDR2 SDRAM
- Fiber optic interface board containing Spartan-6 FPGA, LPDDR2 SDRAM, camera link receivers
- Camera interface board containing Stratix V FPGA, PCI-Express, DDR3 SDRAM, 1Gbps Ethernet (SGMII phy)

SEPTEMBER 2010 – FEBRUARY 2013
System Design Engineer / Bilkent Underwater Acoustics Technologies Research Center, Ankara

Duties on designing a counter measure unit to torpedoes activated with change of magnetic field:
- Schematic and layout design of a D-type amplifier and environmental condition tests of the board
- Generation of PWM signals on FPGA (Basys2 demo board) to drive D-type amplifier in DC and AC mode
- Design and simulation of coils on Comsol Multiphysics
- Magnetic field measurement with Bartington Spectramag-6 magnetometer and processing signals on MATLAB

Trainings and Seminars

Linux System Programming, Dr. Nazim Koc	August 2019
Embedded Linux Systems, Dr. Nazim Koc	August 2019
Enabling FPGA Accelerators using the Acceleration Stack for Intel CPU with FPGAs	May 2019
IMX RT1050 Hands-on Training, EBV	April 2019
C++ Programming for Embedded Systems, Doulos	December 2018
Networking Fundamentals - CCNA Start, Kuantek	November 2018
Incremental Compilation on Altera/Intel FPGAs, Kuantek	February 2018
Static Timing Analysis on Altera/Intel FPGAs, Kuantek	February 2018
C Programming for Embedded Systems, Doulos	September 2017
Embedded Design for Intel SoC FPGAs, Doulos	April 2017
Verilog, System Verilog & UVM Fundamentals, Anka-Sys	January 2017
The Intel SoC FPGA Developer Forum (ISDF)	September 2016
DO-254 Based FPGA Digital Design Flow, PLC2	February 2016
Building Gigabit Interfaces is Altera Transciever Devices, EBV	April 2015
Introduction to QuartusII, EBV	January 2014
Mentor Graphics DxDesigner Training, CDT	April 2013

Skills

- **Programming Languages**
  Java, C/C++, Assembly, Python, MATLAB, GNU/Octave
- **Hardware Description Languages**
  VHDL, Verilog, System Verilog
- **Board/PCB Design Tools**
  Mentor Graphics DxDesigner, Proteus Isis
- **Software & EDA Tools**
  Microsoft Visual Studio, Code Composer Studio, Code Blocks, Intel/Altera QuartusII/Prime, Xilinx ISE/Vivado, Mentor Graphics Modelsim, Mentor Graphics HDL Designer, Tortoise SVN, Pspice/5Spice/LTSpice, Comsol Multiphysics, Rational DOORS, SAP, Kanboard, Oracle Primavera

- **Operating Systems**
  Microsoft Windows 7/10, Apple macOS, GNU/Linux (Raspbian), Ubuntu
- **Languages**
  Turkish (Native), English (Fluent), German (Basic)

Activities

- Electronics hobby projects: Arduino Uno, Raspberry Pi
- Table tennis, Bowling, Running, Watching movies with my family, Watching football