

Baran Yalcin

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Summary

I am an embedded software developer who has worked on various projects in different industries. That is because I enjoy what I am doing as long as it is about programming. I follow a creative, innovative and a playful mindset while programming and I always look further for learning new things and improving myself.

Experience

Ibeo Automotive

EINDHOVEN, NETHERLANDS

Software Engineer

Mar 2020 – July 2020

- Python development for test automation project where LIDAR sensor models are simulated
- Designed, developed and documented a test variation mechanism for existing test scenarios

DAF Trucks

EINDHOVEN, NETHERLANDS

Embedded Software Engineer

Dec 2018 – Mar 2020

- Implemented non-engine related software functionalities for the vehicle in a model based development environment following the V-Model and Scrum methodologies
- Prepared documentation, unit tests and connected model tests for the functionalities
- Worked on Python and MATLAB scripts for automating development and build related processes
- Assisted to the software testing team for issue resolution and software verification
- Established a team for the internal hackathon to develop a speech based Android application for controlling the vehicle functionalities

Vestel

MANISA, TURKEY

Systems Design Engineer

Aug 2016 – Dec 2018

- Developed a CNN based age/gender prediction algorithm in C/C++ using Caffe framework and integrated it to the camera HAL by using Snapdragon Neural Processing Engine SDK.
- Integrated real-time and postprocessing third-party image processing algorithms to QCamera2 HAL layer. Performed bug fixing and developed fine tuning headers for the algorithms.
- Developed C/C++ software, fixed bugs and performed message passing for stereo camera between HAL and mm-camera layers.
- Performed ISP & 3A tuning using Chromatix and MATLAB. Analyzed image quality by using Imatest tool.
- Built a microcontroller based OIS test device for measuring the stabilization effect.
- Assisted SW team in camera driver bring-up/configuration and OTP implementation and verification processes.
- Performed module specific autofocus and white balance OTP calibration for camera modules.
- Developed Python, bash and batch scripts for compiling and flashing ISP header files into devices.

Optofluidics and Nano-Optics Research Laboratory (Koc University)

ISTANBUL, TURKEY

Research/Teaching Assistant

Sep 2013 – Sep 2015

- Designed and developed laser scanning confocal microscope hardware (schematics, PCB) and software (in embedded C) in a government funded project in industrial partnership with [Teknofil](#).
- Performed prototyping, schematic design and testing for the electronic control unit which interfaces DACs, galvanometer scanning mirrors and a photomultiplier tube.
- Developed embedded C software for ARM Cortex-M based microcontrollers to perform data and image acquisition to PC via USB protocol.
- Implemented a PyQt based user interface on PC side written in Python which used SciPy, Numpy, matplotlib and PIL modules.
- Work completed in this project formed my MS thesis. I also conducted problem solving and laboratory sessions for various courses as a teaching assistant.

Petkim

IZMIR, TURKEY

Intern

July 2012 – Aug 2012

- Worked as a field service engineer in the leading petrochemical company of Turkey.
- Provided service and maintenance for electrochemical gas sensors.
- Programmed Siemens and Yokogawa PLCs in the instrumentation department.

Vestel

Intern

MANISA, TURKEY
July 2012 – Aug 2012

- Worked as a hardware design engineer in the LCD TV R&D Center (Vestel City).
- Prepared BOM, performed electrical tests on TV motherboards.

Erasmus University Rotterdam

Project Support Coordinator

ROTTERDAM, THE NETHERLANDS
Dec 2010 – May 2011

- Participated in a two week long extracurricular exchange program between Erasmus University Rotterdam and Koc University where academic, cultural, business and social activities are conducted.

Education

Koc University

Master's degree in Optoelectronics & Photonics Engineering

ISTANBUL, TURKEY
Sep 2013 – Sep 2015

- Advisor: Prof.Dr.Alper Kiraz
- Thesis title: *Hardware/Software Design and Implementation of a Laser Scanning Confocal Microscope Controller Using Open Design Approach*

Koc University

Bachelor's degree in Electrical & Electronics Engineering

ISTANBUL, TURKEY
Sep 2009 – June 2013

- Final year project: *Linear Programming on GPU with CUDA*
- Awards: Vehbi Koc Scholarship (Spring 2013), Deans Honor Roll (Fall 2012)

Skills

Software:

- Real time embedded software development with C/C++ (C99/C++11) on Snapdragon SoCs(Android), ARM Cortex-M, ATmega32, MSP430, PIC 16F microcontrollers
- Experience with toolchains such as gcc, clang, gdb, valgrind and make
- Knowledge of Android in platform level and embedded Linux
- Bash scripting and proficiency using Linux environment
- Python scripting, GUI development on PC environment with PyQt and Tkinter
- Android application development with Android Studio in Java
- Model based development using Simulink
- Scientific calculation, modeling, simulation and image processing using MATLAB
- Knowledge of assembly language, Java, Forth and Lisp
- Test driven development by using Google Test in C++ and unittest in Python
- Knowledge and experience in I2C, SPI, USB, UART, CAN, LIN and Bluetooth data transfer protocols
- Machine learning using Caffe, YOLO and Snapdragon Neural Processing Engine frameworks
- Software version control by using git and SVN
- Code review and collaboration through gerrit and Bitbucket
- Task tracking on JIRA and RTC platforms
- Experience with parallel computing using CUDA C/C++
- Knowledge of Jenkins for CI/CD
- Requirements management using DOORS Next Generation
- UML based development with Rational Rhapsody

Hardware:

- Simulation of electronic circuits in LTspice
- PCB design by using EAGLE
- Hardware prototyping, testing and debugging with oscilloscopes and logic analyzers
- Knowledge in camera optics and sensors
- Familiarity with lens simulation by using Zemax

Languages:

- Turkish (*native*), English (*full professional proficiency*), Dutch (*beginner*), German (*beginner*)

Hobbies:

- Playing guitar and ney flute, biking
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