Alexander Farley
alexander.s.farley@gmail.com
asfarley.com
Github/asfarley

Skills

C, C#, ruby, MATLAB
Kalman filtering, visual multi-object tracking
Neural network design (Theano, DNN, CNN)
PCB layout and firmware design
FPGA design (Simulink, LabVIEW)

Professional Experience

Frobot Aug 2016 - Current
Position: Developer
Developed vending machine system (electrical and software system architecture). Currently working with manufacturers to bring this product to market.

Prolucid Technologies Jan 2015 - Jul 2016
Position: System Integrator
Developed FPGA components in LabVIEW for ultrasonic/electromagnetic non-destructive examination (NDE) equipment. Implemented sensory input and signal conditioning routines. Provided on-site debugging support for system testing. Developed closed-loop motor controls, sensor calibration procedures and other subsystems.

Developed closed-loop control for microfluidic sample flow. Developed Linux device driver for linear actuator control. Diagnosed and fixed issues in multiple-object tracking system. Improved system stability by implementing corrections for nonlinear regions in system model. Developed tooling to aid in system diagnostics (live GigE video sniffing application).

Aversan Jan 2012 - Jan 2015
Position: Embedded Systems/Test Engineer
DO-178B systems testing. Requirements analysis and automated test development. Root cause analysis and fix verification. Integration lab maintenance. Some experience with Serena Dimensions configuration management.

Developed automated tests for ADCs, linear actuator and temperature feedback controls, fault response and reconfiguration, communications protocols, memory, system configuration, signal conditioning and related components. Maintained test execution tooling scripts in Python.

Contract work (elance.com/s/asfarley) Aug 2010 - Jan 2015

- Industrial machine vision & control system development for Daqota Systems. Experience with Visual Studio 2010, Teledyne Dalsa computer vision libraries, soft real-time blob detection, image segmentation and classification.
- Linear actuator PID control firmware programming (C, AVR Studio 5) & PCB layout (Eagle V5) for Precision Microdrives. Designed test jig circuit schematic and firmware. Laid out PCB, assembled prototype, initial PCB bring-up.
- Developed AES-encrypted bootloader port (C, assembly, AVR Studio 5) for Dragon Link Labs
- Developed image-based cell counting/hemocytometry script in MATLAB

SKF Magnetic Bearings May 2008 - Sept 2009
Position: Electrical Engineering Intern
PCB layout for analog oscillator source board. C# Windows GUI programming, analog/digital hardware troubleshooting. Neutron chopper system diagram illustrations. BOM maintenance. Automated PCB testing.

Education

University of Calgary Sept 2005 - May 2010
BSc Electrical Engineering