Aidan Johnson

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EDUCATION

Bachelor of Science in Electrical Engineering — September 2014 – June 2018
University of Washington — Seattle, WA
Cum Laude — *GPA:* 3.83/4.00

– *Concentration Coursework:* Design & Application of Digital Signal Processing, Medical Imaging, Random Signals in Communications, Digital Image Processing, Discrete-Time & Continuous Linear Systems, Digital Circuits & Systems, Data Structures & Algorithms, Synthetic Biology, Devices & Circuits, Genome Informatics

EXPERIENCE

Student Research Assistant — September 2017 – September 2018
Applied Physics Laboratory — University of Washington

– Designed and developed microphone and filtering circuits, ICs, and data acquisition software for an autonomous bat detection and tracking array on the ARM architecture. Collaborated with research associate in seeking to derive computational principles of coordinated flight and sensing across multiple agents through ultrasonic acoustic signal processing and analysis of bat echolocation signals.

Energy Intern — June 2017 – September 2017
Wastewater Treatment Division — DNRP, King County, WA

– Worked and communicated in multidisciplinary teams to improve energy efficiency division-wide in treatment plants and offsite facilities. Analysed energy data for the purpose of tracking quarterly facility progress. Estimated energy cost savings from energy efficiency measures using statistical models in MS Excel.

Undergraduate Research Assistant — February 2016 – June 2016
Renewable Energy Analysis Lab — University of Washington

– Supported post-doctorate researcher in power systems economics and energy storage integration. Surveyed research literature on energy storage capacity and location optimisation problems.

PROJECTS

Musical Instrument Classification — June 2018

– Designed with a partner a real-time musical instrument classifier able to distinguish solo instruments based on individual acoustic characteristics, or the human-perceived quality called timbre. A support vector machine (SVM) model was used, with reasonable accuracy, to be implemented it in on a low-cost and memory-constrained TI DSP.

Conway's Game of Life — March 2018

– Using Verilog, implemented this cellular automaton game on an FPGA with the current state of the cells indicated by patterns on a colour LED array.

Impressionist Painting Effect — December 2017

– Implemented a non-photorealistic rendering (NPR) algorithm in MATLAB for creating an impressionistic oil painting effect on digital images given layered curved brush strokes parameters set in a GUI.

Motor Speed Control — March 2017

– Led three-person team in prototyping a pulse width modulation (PWM) speed control for small DC motor. Applied knowledge of semiconductor devices in a laboratory setting to satisfy design project specifications.

SKILLS

Programming — Python, MATLAB, C, Java (intermediate); Verilog, LaTeX, C++ (basic)
Technical — Multisim, Quartus, ModelSim, SolidWorks (intermediate); Microsoft Office Suite (advanced)

HONOURS

Eta Kappa Nu (HKN) - Iota Upsilon Chapter — 2017 – present
IEEE Member — 2015 – present
Quarterly & Annual Dean's List — 2014 – 2018