Michael B. Ferguson

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Education

- *Oklahoma State University* – Stillwater, OK — Overall GPA: 3.0

  Bachelor of Science in Computer Engineering(BSCpE) — Spring 2021
  Bachelor of Science in Electrical Engineering (BSEE) — Spring 2020
  ↪Specialization in Controls, Signal Processing, and Communications

Work Experience

- *Boeing*: Intern Software Engineer — Summer 2017/2018 & Winter 2017

  Learned the process of developing, testing, and debugging code while working with mentoring engineers. Specifically worked with the Controls and Displays group on pilot interfaces and displays for the B1 Lancer. Developed a coding standards checking tool in Perl as my independent project.

- *Capstone Design 1*: Ultrasonic Defect Detector — Fall 2018

  Worked alongside ECE students to develop a defect detector for aluminum metal plates. My contribution entailed creation of the high voltage pulse circuit, developed in PSPICE, which generated 100ns pulse widths at 200V. I also developed a simple GUI using an arduino TFT screen to control the output and display data.

- *Capstone Design 2*: Magnetic Levitation Chamber — Spring 2019

  Collaborated with MAE students in an interdisciplinary project to create a magnetically levitated sphere suspended using electromagnetic coils. I worked on the camera feedback system which utilized MATLAB's Image Processing Toolbox to provide a low-latency measurement of the target's position relative to the coils. I also helped develop the current control circuit which regulates the magnetic flux leaving the coils.

- *Autophysics*: Laboratory Research Assistant — Summer 2019

  Helped to implement an experimental setup that studied flight patterns of the honey bee. As the only ECE student, I installed and debugged an open source research algorithm called Flydra. This required an intense upfront workload as the Linux machines in the lab had no preinstalled software. Other problems that I faced included many versions of Flydra's old documentation being mixed together, incompatibilities between cameras and drivers, and library linking/compilation problems. I created a new set of documentation for the lab which helped to expedite other researcher's progress when learning to first use Flydra.

Skills

- *Coding Experience & OOP*

  Familiar with a variety of coding languages. Primarily Ada, C++, Java, Perl, Python, MATLAB, and C. My time while working at Boeing gave me experience in using OOP perspectives on large scale projects. I'm confident in my ability to quickly learn any language, given working examples of code or library demos.

- *Hardware Design Tools, IDE & Debugger Training*

  Experience in design programs such as Keil uVision, Quartus Prime, LayoutEditor, PCB Editor, Labview, MATLAB, AutoCAD, SPICE, Circuit simulators, and many coding IDEs. I've acquired an intuition in quickly learning new pieces of software, as many things are common amongst the settings and functionality. With a sufficient amount of tutorials or documentation I am able to use almost any piece of software.

- *Independent Research*

  I spend spare time occasionally to educate myself on things that aren't covered within my coursework. I enjoy completing programs on Project Euler, a series of challenging mathematical/computer programming Problems.

Relevant Coursework

Computer Networks	Digital Integrated Circuit Design	Digital Logic Design†
Digital Signal Processing	Embedded Computer Systems†	Network Analysis†
Random Signals & Noise	Electronic Devices and Applications†	Automatic Control Systems
Data Communications†	Des & Impl Operating Systems	Computer Architecture†

†Courses with a dedicated lab portion.