BRINDYN E. SCHULTZ

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WHY CNC MACHINING?

When I first started building projects of my own, I often went online and looked for the cheapest parts I needed that were available. The problem is that many of those cheap parts were low quality, which led to lots of frustration, and taught me a lesson about the importance of always having quality parts. I took a tour of Walco Tool & Engineering, and when I saw the attention they put towards ensuring quality I knew that I wanted to be part of a team that makes true quality. I want to be able to use my engineering background to help the team find the most efficient ways of producing high-quality parts that will save workers from many industries from feeling the frustration that I once felt.

SUMMARY OF TECHNICAL QUALIFICATIONS

MATHEMATICS:

- Differential and Integral Calculus, Linear Algebra, Discrete Mathematics

ENGINEERING:

- Gravitational and Electrical Physics, Object-Oriented Programming, Logic Design, Electrical Circuit Analysis, Signals and Systems, Semiconductor Engineering, Computer Architecture, Robotics, Hardware Software Systems

SPOKEN LANGUAGES:

- English-Fluent (Native), Spanish-Fluent (Second Language)

OTHER PROFICIENCIES:

- Intermediate Woodworking, Beginner Welding, Intermediate Brickwork, Advanced Electrical Repair, Beginner Plumbing, Beginner HVAC Maintenance, Advanced Automotive Repair, Advanced Agriculture

EDUCATION

Bachelor of Science in Computer Science and Computer Engineering
Minor in Mathematics Expected: May 2024
Lewis University, Romeoville, IL
Concentrations: Embedded Systems

NOTABLE PROJECTS

DIGITAL ALARM CLOCK:

- For this project, I was tasked to build a real-time digital alarm clock. I designed the alarm clock using digital logic and boolean expressions. I had to program its hardware functions using Verilog inside of Vivado. I digitally simulated and synthesized the design and breadboarded it. I presented the project at an engineering event at my university.

VOICE-CONTROLLED VENDING MACHINE:

- This was my final project of my freshman year Intro to Electrical and Computer Engineering course. This project was made during the height of the COVID-19 Pandemic, which is where we got our inspiration. I wanted to create a contactless vending machine, so I decided to use voice activation and control. I presented this project on two separate occasions at my University.

MODEL OF THE US POWER GRID:

- For this project I led a six week period of research on the centralized power grid for the Lewis University IEEE Student Branch. This project researched in great depth power

generation, transmission, and distribution. We also researched auxiliary topics such as cyberattacks on the power grid, and the effects that decentralized power and power storage have on the power grid.

RELEVANT COURSES

GENERAL PHYSICS 2 WITH LAB:

- This course was a calculus-based physics course that used my previous knowledge of gravity-based physics and expanded on it with a focus on electrical, magnetic, and particle physics. For labs, I was challenged to find physics-based explanations and equations through intricate experiments by collecting data and graphing. I also had to make physics simulations in Python using physics-based libraries and my newly acquired knowledge of physics equations.

CALCULUS 3:

- In Calculus 3, I was challenged by expanding on my prior knowledge of Algebra, Geometry, Trigonometry, Calculus, and Physics to explore new ways of making particular mathematical computations related to physics and three-dimensional geometry.

CIRCUIT ANALYSIS 1:

- In this course, I learned about how to analyze and refine various electric circuits. This includes learning how to simplify circuits using Norton's Theorem and Thévenin's Theorem. This course showed in-depth analysis of both DC and AC circuits and taught formulas for phasor and polar notation.

COMPUTER ARCHITECTURE 2:

- For computer architecture, I learned low-level programming and how software interacts with hardware. I learned how to use Assembly languages, and how to write programs that can make use of serial and parallel processing. I learned how to read hexadecimal data and how to use it, and how to read and write data in hardware. I completed ambitious projects such as recreating the PIP-1 computer in Minecraft, and creating interactive video games on a Commodore 64.

SEMICONDUCTOR DEVICES:

- In this course I learned equations for analyzing and creating semiconductor components. I learned quantum physics and semiconductor chemistry. I also learned about doping, band gap and electron mobility. I learned how to make diagrams for various types of diodes and FETs.

ACTIVITIES

- Lewis University IEEE, 2021 – Present
  Member, 2021
  Vice Chair, 2021
  Chair, 2022

- Lewis University Society of Physics Students (SPS), 2021 – Present
  Member, 2021

- Lewis University Chess Club, 2021 – Present
  President, 2021