Matthew Reisdorf

810 Olive Street, Greensboro, NC 27401
(336) 686-9560
mreisdorf9717@gmail.com

Educational / Professional Summary

Highly motivated recent graduate from Appalachian State's physics department. Leveraging my physics and mathematics background, I desire to pursue a career in the data, analytics and/or Machine Learning / Artificial Intelligence (ML/AI) space. Ideally, I would be able to bring technical, data-driven solutions to solve real business challenges. I am currently reading Ralph Kimball's Data Warehouse Toolkit, 3rd Edition, and looking into ways I can implement solutions presented in that text.

In my student work, I am proud to have coordinated our capstone curriculum engagement being a team-based, four-month lab experiment determining the mass of an electron using Helmholtz coils, while logged all the data in Excel and analyzing with OriginPro software. In separate studies, I also designed digital circuits with Arduino integration to control motors and distance sensors. Since graduation, I am delving deeper into learning different programming languages; implemented Reddit's API in a Python script to translate non-English posts, and designed a personal website utilizing HTML, CSS, and ECMA. Currently working on a cryptocurrency project to track prices using Coinbase's API with Python and exporting to a local database for pulling relevant data with SQL.

Skills

- Python
- SQL
- HTML, CSS
- ECMAScript
- C++ (Arduino)
- Circuit Design
- OriginPro, LoggerPro, and Excel

Projects

GitHub: **https://github.com/MattReisdorf**

Reddit Title Post Translator

Python script to translate non-English posts on Reddit. Authenticated the 'bot' account with OAuth2 in a separate script, then used Reddit's python API wrapper (PRAW) and an unaffiliated Google Translate API to translate the top 10 posts in r/France. The specific subreddit and target language can easily be changed within the script, as well as the category of post in question (Hot, Top, Controversial, etc.). This was an early attempt at writing code for personal use outside of university coursework.

Arduino Distance Sensor

C++ code for a final project in a digital circuits lab. The code is executed by the Arduino, with the wired distance sensor returning a value that is then sent to a digital 7-segment-display.

Electron Charge/Mass Experiment

Not a coding project, but this was the capstone experience to my physics degree. It was a four-month long project working with Helmholtz coils and an electron emission filament. Essentially, Helmholtz coils are two adjacent copper coils that have a large amount of current run through them; this creates a largely uniform magnetic field. Charged particles, such as the electron emitted from the filament, feel the Lorentz force if they are traveling at a right angle to the magnetic field. Taking advantage of this, the electron can be forced to travel in a circle, where the radius of travel changes depending on the strength of the magnetic field. Three-month's worth of data was collected at various magnetic field strengths by changing the current through the coils while measuring the radius of the electron's path. Since the electron moved in a circle, the formula for centripetal motion was utilized and the charge-to-mass ratio could be determined. All data was logged in Excel spreadsheets and small python scripts were used to do some of the calculations quicker. At the end of the experience, an AIP style paper was written and presented to faculty members.

Education

12/2020 **Bachelor of Science: Physics**

Appalachian State University – *Boone, NC*

- Coursework in Classical Mechanics, Modern Physics, and Python Programming
- Minored in Mathematics, with an emphasis on Calculus and Differential Equations, with some work in Linear Algebra

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Work History

07/2019 to 09/2020 **Host/Server**

Coyote Kitchen – *Boone, NC*

- Prepared beverages and filled food orders for customers.
- Documented special requests and followed up with back-of-house staff to foster top-quality service and minimize complaints
- Enhanced operational efficiency by using slow periods to restock supplies
- Trained new employees on host duties

09/2018 to 04/2019 **Ski Lift Operator**
Appalachian Ski Mountain *– Boone, NC*

- Verified best possible conditions for all ramps and loading gates to facilitate safe, efficient loading and unloading of customers.
- Promoted safety of guests and mitigated liability risks by monitoring recreation areas, enforcing rules and safety policies.
- Second season, assigned additional responsibilities including:
  - Autonomously enabled mountain wide lighting and ensured operational efficiency of all lifts at the start of the shift.
  - Fostered relationships with upper management and other departments to provide smooth, complete experience for customers.