Benjamin McLemore

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Work Experience

Nov 2021 - Present **Data Engineer** University Technology Office, Arizona State University

- Write Python data pipelines using Prefect to fulfill data requests from university departments, faculty, and staff, mostly on AWS infrastructure.
- Update and maintain the Jenkins code pipelines that deploy the department's data pipelines.
- Helped maintain some university portal web pages, which retrieve and display data from university APIs.

Aug 2021 - May 2022 **Software Developer** Arizona State University Honors Thesis Pathway

- Worked with a student software development team and a student accounting team to build a web-based accounting product for a private accountant to be released in the future.
- Developed the web application in the React and Express Javascript frameworks and hosted it on AWS infrastructure.

Jan 2021 - May 2021 **Database Systems & Python Instructional Aide** New College, Arizona State University

- Developed resources to assist students in learning the material, such as example projects, instructions on using software, and reference sheets.
- Assisted the professor in running the class sessions over Zoom.
- Held office hours for and maintained email correspondence with students to help them complete projects and learn the material.
- Helped teach students the basics of using Python for data science, including extracting data from sometimes messy documents in CSV or XML format, organizing the data and storing it in a standard relational database, and extracting the data from the database for statistical analysis and visualization.

Education

Aug 2019 - Present **Computer Science BS, Barrett Honors**, 4.0 GPA, Arizona State University

Jun 2019 **Graduated High School**, GPA 4.0, Wexford Homeschool

Classes in Specialized Areas

CSE 325: **Embedded Microprocessor Systems** A+

- Learned about the fundamentals of embedded microprocessor system design and programming, including various forms of digital/analog conversion, hardware interrupts, hardware timing, and external device communication.
- Final Project: Built a simple, autonomous robot with a FRDM-KL46Z microprocessor and programmed it to navigate physical and color-coded mazes. Used external devices including PWM controlled motors with Hall sensors for speed/direction awareness, ultrasonic sensor with timing-based, GPIO communication, PWM servo (to turn the ultrasonic sensor), black/white ADC sensors, and an I2C color sensor.
- As an extension of the project, I attached an I2C Wii Nunchuk controller to the robot so that I could drive it around manually.

CSE 476: **Natural Language Processing** A

- Learned about many different ways to model human languages and how to use them, including n-gram modelling, part-of-speech tagging, syntax parsing, semantic role labelling, and semantic word embeddings.
- Used knowledge from class to build models that can detect the language of a particular text and to analyze differences in word usage from different sources.

CSE 445: **Distributed Software Development** A+

- Learned about the service oriented computing philosophy, multithreaded and event-driven programming, using XML for data storage and transfer, and web application development and security.
- Final Project: Built an ASPX web application in .NET with user registration, authentication, and different access priveledges, access to third-party APIs, and a service oriented architecture using WCF services.

Skills

Programming Languages:
Python, C/C++, SQL, Typescript/Javascript, Java, C#, Ruby, Rust, Erlang, Prolog

Frameworks/Libraries:
Python: Pandas, Jupyter Notebooks, Matplotlib, Numpy, Tkinter
Typescript/Javascript: React, Express
Java: Swing

Products/Technologies:
Infrastructure: AWS Core Services, Terraform, Jenkins
Data: Prefect, SQLite, Oracle Database/Oracle SQL Developer