

Macky Brock McWhirter

Lubbock, Texas | 806-456-7313 | brock2134career@protonmail.com | github.com/Brock2134

Work Experience

Diamondback Energy | Remote

April 2022 – Present

Software Engineer

- Built and maintained web applications to track items and their pertinent information for the accounting dept
- Designed user-friendly front-end applications with React & TypeScript
- Maintained backend infrastructure of multiple applications in C#, ASP.NET Core 3.1, .NET 6
- Led a migration effort for upgrading backend infrastructure to .NET 6
- Worked with Apollo GraphQL API and ChilliCream's Hot Chocolate framework for back-end/front-end data transmission
- Built multiple integration jobs in Automic with PowerShell scripts and Informatica task flows that pull data from vendor APIs
- Maintained CI/CD pipelines for development and production environments as well as tracked work items with Azure DevOps
- Worked on an on-call rotation related to checking status of running Automic jobs and resolved errors as they came through

Consolidated Nuclear Security (CNS) Pantex Plant | Amarillo, Texas

July 2020 – April 2022

Software Engineer

- Built custom software for a new product using National Instrument's LabView, TestStand, Diadem, & C#
- Upgraded software for Windows 10 compatibility for a product using C# that increased product speed by 50%
- Designed and deployed desktop applications for other departments using C#, .NET, and WPF
- Worked with other engineers and coordinated with various departments to provide product support
- Assisted in maintaining dept. software documentation for multiple product codebases
- DOE Q security clearance (currently inactive)

Texas Tech Application Development & Support | Lubbock, Texas

March 2020 – May 2020

Software Developer

- Designed new modules for Texas Tech's payment system using Python 2.7 & Flask
- Assisted in pushing bug fixes for Texas Tech's event management and ticketing system for on-campus events
- Learned how to work in an agile development environment
- Integrated the payment system into other Texas Tech systems

Skills

Programming and other tools: C#, C, C++, React, TypeScript, JavaScript, PowerShell, Apollo GraphQL, Java (Spring framework), MATLAB (Signal Processing Toolbox), SQL, Python (Pandas, NumPy, Scikit-learn, Matplotlib, Flask, PyTorch), Microsoft (.NET, MS SQL Server), Informatica, Automic (automation platform), VSCode, Visual Studio, PyCharm, Postman, Insomnia

Cloud: AWS

Projects

ISRC Finder

- Designed a REST API with Java and Spring framework to pull track information from Spotify's API
- Track information was saved to a MySQL database and architected as a basic CRUD application
- The API would pull the track name, the track duration, and whether a track was explicit from the Spotify API using an ISRC number provided by the front-end client

Worm Classification

- Designed an image classification system to classify C. Elegans worms using Python and PyTorch
- The system classified whether a worm was alive or dead as well as other objects (fecal matter)
- The first implementation used SoftMax regression classification written from scratch
- The second implementation used PyTorch to implement a Neural Network
- Both systems had around an 85% success rate for identifying worms

Noise Cancellation

- Designed an acoustic echo cancellation system using Least-Mean Square (LMS) filters and other noise cancellation techniques
- Isolated the transfer function of a room using field recordings recorded through microphone
- Implemented both an adaptive filter as well as another solution using Yule-Walker Power Spectral Density
- System was built using MATLAB and the Signal Processing Toolbox
- System had an overall 80% echo cancellation success rate

Education

Johns Hopkins University | Baltimore, Maryland

Master of Science in Electrical & Computer Engineering

Present (in-progress)

Expected Graduation: December 2024

Texas Tech University | Lubbock, Texas

Bachelor of Science in Computer Engineering

May 2020