

Glass Elsarboukh

contact@glass-ships.com

GitLab: glass-ships

719.445.9699

Colorado Springs, CO 80923

Summary

Scientific software engineer seeking opportunities to hone skills and grow as a developer.

Passionately curious, creative problem solver.

Education

- **University of Colorado, Denver**

Bachelor of Science in Physics, with a focus in computational methods, 2020

Skills and Languages

- Python
- Docker
- Git
- Linux, Windows
- Bash scripting
- Agile/Scrum workflow

Experience

- **Super Cryogenic Dark Matter Search** - Research Assistant (Jan 2018 - Present)

The Cryogenic Dark Matter Search (SuperCDMS) is one of several collaborations performing experiments to directly detect weakly interacting elementary particles and thus understand the nature of the dark matter.

- Built Docker image of analysis environment for JupyterHub deployment
 - Allows users to quickly and securely access data analysis environment
 - Eliminated the need to install cumbersome dependencies
- Build debugging for legacy data processing software
 - Identified core dependencies
 - Converted outdated code from Python2 to Python3
 - Fixed broken/missing C++ import statements
- Migrated software repositories to GitLab from self-hosted GitBlit server

- **Diana HEP** - Diana Fellow (Dec 2019 - June 2020)

The primary goal of DIANA/HEP is to develop state-of-the-art software tools for experiments which acquire, reduce, and analyze petabytes of data.

- Initial implementation of Awkward arrays as target language for Kaitai Struct
- Awkward arrays allow for storing data into nested, jagged arrays of arbitrary types
 - Python/C++ compatible
 - Resource and time efficient, using as little as 10% of the required time and RAM usage as standard Python dicts
- Kaitai Struct generates code for interfacing with custom binary data based on a YAML-like description of that data
 - Many popular target languages like C++, Java, Golang, etc.
 - Can be difficult to use with complicated data formats
- In theory, allows scientists with custom data format to simply describe their data, and end up with highly efficient and accessible Awkward Arrays.
- Proof of Concept presented to Diana HEP group and published to OSF

- **Glass Ships** - Live and recording musician (2012 - Present)

- Audio recording and engineering
- Production, mixing and mastering