Julius Park

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Education

Candidate for BSc in Computer Engineering, Drexel University, GPA: 3.64, *2016-2021*

Skills

Languages Python, C#, C++, Julia, Swift, MATLAB, VHDL
Technologies Git, Perforce, Visual Studio, Tensorflow, NumPy, Pandas, bash, zsh, Jira, Docker, .NET, QGIS

Experience

***Software Engineering Intern*, MongoDB, San Francisco**, *June 2020–Aug. 2020*

- Led development of a standalone Python package for debugging and profiling code that utilizes MongoDB's Python driver
- Employed monkey-patching to develop command line interface for debugging existing Python scripts
- Integrated multiple testing methods into software package including unit testing and specification testing
- Contributed multiple features and bug fixes to official MongoDB Python driver which has over 6 million downloads a month, in addition to the official NumPy integration package

***Software Engineer*, Analytical Graphics Inc., Exton**, *Apr. 2019–Sep. 2019*

- Worked on Scalability team primarily developing Software Tool Kit, AGI's flagship aerospace simulation software, focusing on parallel processing and supporting macro scripting engines
- Led migration of STK's 3mil LOC code base to comply with C++20 standard and remove deprecated code, including validation of pre-processor tags to ensure deprecated code is not added in the future
- Changed third-party libraries and their build scripts to remove dependence on boost::filesystem as part of effort to switch over to std::filesystem
- Developed testing framework for various parallel processing features including binary save and load and parallel volumetric calculation
- Led creation of plugin to graphically visualize dependencies between STK objects using MSAGL

***Software Engineer*, Drexel University CCI, Philadelphia**, *Apr. 2018–Mar. 2019*

- Led development of application using C# to interface with a medical device designed for physical therapists
- Designed data models, coded vast majority (99% of commits) from start of project to release
- Built interface including live visualization of data from medical device, and export of data in compliance with HIPAA
- Used multithreading to enhance performance and allow real-time plotting of data over Bluetooth serial connection

***Software Engineer*, Drexel University, Philadelphia**, *Feb. 2017–Apr. 2018*

- Utilized Python and NumPy, Python Imaging Library, Cython, and OpenCV to create custom algorithm to quantify architectural changes in images
- Wrote image comparison software for research project NSF #1562515
- Collaborated with faculty at both Drexel and UT Austin

Extracurricular & Personal Projects

OpenStreetMapPlotter.jl

- Developed a package for Julia to parse, display, and export maps in OpenStreetMap format
- Integrated with Overpass API to allow easy access to map data and developed MapCSS parser to allow custom theming of resulting map plots from CSS files
- Package was accepted into official Julia package manager

BikingElevationMap

- Developed Python code using GeoPandas to generate custom elevation maps from OpenStreetMap data and export resulting geometry to .shp or .geojson format
- Used QGIS to style resulting files and create finished maps

DART Robotics Team *2018*

- Lead for image processing on MATE aquatic robotics team
- Using OpenCV to process images from aquatic robot, including object detection and OCR