JULIAN RACHELE

(646) 580-6856 • julrachele@gmail.com • linkedin.com/in/jrachele • github.com/jrachele

EDUCATION

University of South Carolina | **M.S Computer Science**   Aug. 2021
- *Relevant Coursework:* Compilers, Algorithms, Networks, Security, Data Structures, Big Data

University of South Carolina | **B.S Computer Science**   May 2020
- South Carolina Honors College
- GPA: 3.93

SKILLS

Programming languages: C, C++, Elixir, Go, Haskell, Java, Javascript, PHP, Python, Rust, Scala, Swift, SQL
Technologies: CMake, Docker, Django, Flutter, iOS, Godot, OpenMP, Qt, React, Redux, REST, Socket.io, Unity, Unreal Engine
Data: d3.js, Hadoop, Keras, Matlab, Numpy, Pandas, Plotly, R, Tensorflow

EXPERIENCE

Software Engineering Research Assistant   Columbia, SC | Nov. 2018 - Present
C++, CMake, Keras, OpenMP, Python, Qt, Tensorflow
- Implemented GUI in Qt5 with integrated workspaces and QtCharts for data visualization for REDCRAFT, a software package for faster and cheaper protein folding.
- Wrote a parallelized matrix multiplication algorithm for the engine improving speeds by 25%.
- Implemented Atlassian Bitbucket CI/CD pipeline and wrote unit tests using Googletest.
- Trained U-Net Convolutional Neural Network to identify the aorta in CAT scan samples for arterial plaque analysis in medical patients.

Software Engineering Intern - Astérion VR   Rennes, France | June 2019 - July 2019
C++, Unreal Engine
- Implemented the Goal Oriented Action Programming (GOAP) AI model to direct terrorist and hostage AI for French counter terrorist operatives during virtual training sessions.
- Wrote the GOAP implementation as a C++ plugin for the Unreal Engine.
- Wrote tests and integrated the plugin using Unreal Engine's blueprint system.

Data Science Research Assistant   Columbia, SC | May 2018 - Nov. 2018
Javascript, Matlab, Python, Pandas
- Created interactive data visualization web platform using Dash by Plot.ly, Python, and Pandas for visualizing simulated ribosomal activity in animal cells.
- Planned and custom built a SUSE Linux machine for parallel data processing.

PROJECTS & CONTRIBUTIONS

Protobowl Mobile [Dart, Flutter, Socket.io, Redux]
- A standalone mobile application for real-time trivia web service Protobowl.
- Uses Socket.io for communication and Redux for state management.

xfce4-workspace-bar [C, GTK, Xfce4]
- Custom Xfce4 panel plugin that makes it easier to swap to and visualize virtual workspaces. Written in C using the GTK framework and Xfce4 workspace hooks.

Saisi [Haskell]
- A fully functioning interpreter from-scratch made with custom parser combinators and function support.

Zone Rouge [Javascript, Google Maps API]
- An interactive map for learning more about French villages destroyed during WWI. Uses Google Maps API with Javascript for functionality.

Capirca [Python, Cisco]
- Fixed Cisco Access Control List generator bug that had been unfixed for 2 years.