Jesus R. Rijo Candelario

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Education

Mercer University **August 2019 -- Present**

Bachelor of Science in Computer Science, Mathematics *GPA: 3.91 / 4.00*

- **Relevant coursework:** Capstone software engineering (Git CI/CD, Agile, SDLC, and REST APIs), operating systems, computer networks (socket programming and TCP/IP), linear algebra, mathematical modeling, and probability/statistics.
- **Academic Awards:** President's List for 5 semesters, Dean's List for 2 semesters, Outstanding Junior in Mathematics Award, Riley Plymale Senior Award in Mathematics, and Eugene Bell Senior Award in Computer Science.

Work Experience

Undergraduate Research Assistant **Mercer University** **August 2022 -- Present**

- Work in an ongoing graphics and VR project with **Oculus Rift** and **Vizard** to aid surgical trainings.
- Override Vizard's standard library with **GLSL** to support customizable interactivity.
- Implement a custom parser with **Python** and **Bash** to convert OSGB/OSGT 3D models into STL files at runtime.

Software Engineering Intern **Columbus State University** **May 2022 -- July 2022**

- Created a **Python** web crawler with **Beautiful Soup** and **Requests** to retrieve and parse 2000+ IoT privacy policies.
- Collaborated in a **spaCy**-driven NLP framework to extract the IoT privacy policies' semantical elements.
- Published our final results and codebase at the 2022 REUNS, 2022 SoCon SURF, and IEEE Xplore.

Undergraduate Research Assistant **Mercer University** **May 2021 -- July 2021**

- Researched and surveyed over 50 academic sources on the key applications of set theory in computer science.
- Implemented containers not found in the **C++ STL** and compared their efficiency to **Boost's** implementations.
- Wrote a technical report outlining common uses of set theory in data structures.

Precalculus Teaching Assistant **Mercer University** **August 2020 -- May 2021**

- Led two mandatory weekly study sessions for undergraduate precalculus students.
- Helped senior lecturers prepare additional course materials with **LaTeX** and **Octave**.

Projects

The MiniBLAS Library **February 2022 -- (Present)**

- Implemented a linear algebra library in **C++/Fortran**, including operations not found on **Netlib's BLAS**.
- Developed multithreaded equivalents of these subroutines using **OpenMP**, **Pthreads,** and **C++ Threads**.
- Used **Bash** and **PBS/TORQUE** to monitor performances across several numbers of threads in **AWS ParallelCluster**.

Optimal Meal Planner App **January 2022 -- (Present)**

- Created a local relational database managed with **PostgreSQL**, containing nutritional facts for over 1000 fast-food items.
- Used **SciPy's** simplex method to find optimal meal plans that meet the user's needs.
- Developed a **C#/.NET** app to display the database and process SQL queries locally.

NMR Analyzer **August 2021 -- January 2022**

- A **C++** analyzer for NMR discrete datasets that supports cubic splines interpolation and several data filtering options.
- Integrated several common root-finding and numerical integration algorithms with **C++ Boost**.
- Used **GNUPlot** and **Matplotlib** for further data analysis and visualization.

Skills

- **Languages (Proficient):** C, C++, Java, Python
- **Languages (Familiar):** Bash, C#, Go, HTML5, CSS, JavaScript, JSON, Perl.
- **Tools:** Git, GitHub, UNIX/Linux (Ubuntu and Debian), CMake, PostgreSQL, MongoDB, VMWare, Wireshark, Zenmap.
- **Frameworks/Libraries:** Angular 9, .NET, Pandas, NumPy, SciPy, Matplotlib, AWS Transcribe, OpenGL, OpenMP, MPI.

Activities

- **Academic societies:** Phi Beta Kappa, Upsilon Pi Epsilon (Computing/IT), and Pi Mu Epsilon (Mathematics).
- **Academic club:** Mercer University's Binary Bears (CCSC/ACM programming competitions).