# Cesar Rodriguez

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## EDUCATION

**University of Michigan** **May 2023, US, MI Ann Arbor**
**Bachelor's of Science in Engineering in Computer Science - Honors Engineering - Magna Cum Laude** **3.55/4 GPA**
**Community Involvement:** Michigan Artificial Intelligence Safety Initiative, Society of Hispanic Professional Engineers
**Relevant courses:**
- Engineering: Machine Learning, Introduction to Artificial Intelligence, Web Systems, Human Centered Software, Introduction to Logic Design, Data Structures and Algorithms, Introduction to Computer Organization, Introduction to Computer Security
- Philosophy: Mind and Machine, Descartes to Kant, Early Modern Philosophy, Critical Reasoning
- Statistics: Statistics and Artificial Intelligence, Computational Methods, Introduction to Statistical Computing

## EXPERIENCE

**Space Systems Analysis and Test Intern - Group 95** **May 2023 - September 2023, US, MA, Westford**
**MIT Lincoln Laboratory**
- Developed distributed PXE boot server and associated TCP, HTTP, and TFTP networking to automate Red Hat Enterprise Linux 8 install and Group 95 software, creating code banks composed of bash scripts which executed Python and C++ code.
- Reduced backend deploy times by 95% or more, and reduced setup complexity by 50% by testing on virtual machines and exporting to sensors.
- Enhanced location estimation accuracy through satellite data analysis and developing test protocols to validate design changes. Reduced location errors through scripted unittest and probing.
- Implemented hardware-in-loop (HIL) testing automation strategy to analyze performance, reliability, extensibility, and long-term success.

**Software Engineering Intern - Cohort Lead** **May 2022 - August 2022, US, CA, Folsom**
**Intel Corporation**
- Created a plugin for an internal tool enabling integration of Intel's new security engine in Intel Firmware Images, improving quality of Firmware.
- Ensured compatibility with external team's images promoting standardization, by writing scripts (Python, Bash) that reconcile differences between team's images and existing images.
- Improved software maintainability by rewriting C++ code restructuring class hierarchy, allowing for interoperability with new firmware engine.
- Conducted code reviews and utilized pair programming to develop and implement new features for the new firmware engine.

**Software Engineering Intern - Cohort Lead** **May 2021 - August 2021, US, IL, Chicago**
**Intel Corporation**
- Standardized stress testing operating system for validating 14th generation central processor units, resulting in increased performance and reliability.
- Integrated outdated Python methods and plugins from different teams, resulting in 4 Intel recognitions, approximately 4% time savings, and provided technical leadership to 3 interns.
- Developed and evaluated simulated models to test CPU functionality on FPGA, resulting in a report of findings and recommendations to the team.
- Trained five international team members in Malaysia on usage and implementation of FPGA simulated model for testing CPU functionality.

## PROJECTS

**Fullstack Developer - Technical Lead** **January 2023 - Present, US, IL, Chicago**
**NextArena**
- Implemented website in accordance to branding specifications with non-technical design team focusing on seamless and intuitive user experience.
- Developed and documented frontend/backend networking API endpoints and database management to optimize data flow and enhance application performance.
- Designed database structure in conjunction with 3 engineers to minimize queries by half to SQL backend and optimize performance.
- Leading a team of 8 to achieve application design for a fully fledged product ensuring its debut in the next year.

**Freelance Data Analyst** **December 2017 - May 2022, US, IL, Chicago**
**University of Illinois Chicago**
- Extracted unstructured data from image sources to produce human interactable data set for use by non-technical Museum Studies Program faculty.
- Formatted and conducted analysis dataset to support research into government accountability by Museum Studies Program faculty.
- Designed data structures to promote ease of use, scalability, and accessibility on a website accessed by tens of thousands of users.

**Research Assistant, Cardiovascular Technology** **October 2019 - May 2020, US, MI, Ann Arbor**
**University of Michigan**
- Conducted interviews with medical professional end-users to identify potential shortcomings in emergency response to cardiovascular arrest and problems that increased response times.
- Created an application to improve communication between medical personnel that reduced response time from 7 minutes to 5.5 minutes by automating note-taking and streamlining the communication process.
- Performed study to document impact of application on response times.

## SKILLS

**Software:** React, Node JS, Photoshop, Cadence Perspec, Arduino, 3D Printing, circuit design, CAD design, Visual Studio, and AutoCAD, Django

**Programming Languages:** SLN, Python, C++, C, CSS, Typescript, Javascript, R, MatLab, Verilog, SQL, and Java

**Operating Systems:** Windows, Linux, Linux Redhat, Ubuntu, Mac OS, and VIM