Nicholas **Alvarez**

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Education

Rice University *Houston, TX, USA*

BSCS in Computer Science; BA in Linguistics *August 2015-May 2019*

Relevant Coursework: Intro To Database Systems, Web Development, Fundamentals of Parallel Programming, Advanced Object-Oriented Programming and Design, Operating Systems and Concurrent Programming, Introduction to Computer Security, Introduction to Program Design, Introduction to Distributed Computer Systems, Distributed Program Construction, Compiler Construction, Honors Linear Algebra GPA: 3.57

Skills

Programming Python, Java, Junit, C, SQL, JSON, Linux/Unix, Git, Subversion, MongoDB, LaTeX

Languages English, Spanish, Japanese

Experience / Extra-Curriculars

Intro to Computer Systems Teaching Assistant

Rice University *Spring 2018, Spring 2019*

- Explained to students fundamental principals of computer systems such as virtual memory and proper usage of C.
- Graded student homework assignments.

Rice Robotics

Member *Aug. 2015 - Apr. 2017*

- Constructed robots for competition in the Vex-U competition.
- Developed the best design solution for specific tasks and challenges in the process of building robots.
- Implemented design solutions for local companies and organizations.

Projects

Genetic Algorithm for Picture Functions

2016

- Implemented, using functional programming methods in Java, a genetic algorithm based on a 1991 Karl Sims paper for breeding various multi-layered composing functions of various order to generate subsequent generations of functions, and to display these functions as pictures of any size.

Group Chat Application and API

2017

- Designed an API for peer to peer group messaging applications using a message-passing architecture allowing two or more separately-developed chat applications to receive and process messages of arbitrary types from each other using an extended visitor model.
- Implemented and debugged the API in Java.
- Determined and examined use cases and catered the API for orthogonality and maximal usability.
- Provided support to seventy users of the API each creating their own chat application.
- Developed a Java chat application using the API able to send images and receive and process messages of arbitrary types, sending and displaying them using a Java Swing user interface.

Dateline Rice 2.0

Data Collection team; Architecture/Infrastructure committee *2018*

- Engaged in an agile-style development workflow to automate manual tasks for a client within a four month timeframe.
- Negotiated, designed, implemented, and debugged a REST API for management of a web-scraping service for automatically gathering all Rice University related news over a given time interval.
- Coordinated with three other teams to architect the service to be distributed and extensible.
- Built a fully fledged HTTP server and daemon process in Python to handle concurrent requests made to and actions performed by the service.
- Responded quickly and effectively to bugs and critical errors discovered by both the end user and other teams during development.