

# Nicholas A. Alvarez

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Jones College 23 Sunset Boulevard Houston, TX 77005

## EDUCATION & SKILLS

**Rice University**, Houston, Texas

Bachelor of Science in Computer Science expected May 2019

Bachelor of Arts in Linguistics expected May 2019

GPA: 3.539

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

*Skills and Proficiencies:* Python, Java, Junit, C, SQL, JSON, Linux/Unix, Git, Subversion, MongoDB, LaTeX, Spanish, Japanese

### Organizations

**2015 – Ongoing**

#### Rice Robotics

- Constructed robots for competition in the Vex-U competition
- Develop, with a team, the best design solution for specific tasks and challenges in the process of building robots
- Implement design solutions for local companies and organizations.

### Projects

**2016**

#### Text-based Adventure Game

- Designed and implemented a prototype rudimentary text-based adventure game in Java, where the player can look at and interact with their world, which is read in through a JSON document

#### Genetic Algorithm for Picture Functions

- 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

#### HackRice

- Rice University CS Club-sponsored hackathon
- Envisioned and created a web app with a group of unacquainted students in, making use of python, JavaScript, HTML and CSS
- Gained experience with python web backend frameworks, Django and Flask

**2017**

#### Group Chat Application and API

- Designed, in a team, 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

## ACTIVITIES & PROJECTS