Guillermo Narvaez-Paliza

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Education

Brandeis University, Waltham, MA — Expected May 2018
Bachelor of Science in Physics and Computer Science
Minor in Mathematics
Current GPA: 3.774

Relevant Courses (Brandeis University)

- Programming in Java
- Discrete Structures
- Software Entrepreneurship
- Data Structures and Algorithms
- Theory of Computation
- Advanced Programming Techniques
- Applied Linear Algebra
- Calculus of Several Variables
- Electronics Laboratory
- Scientific Data Processing
- Modern Physics: Waves and Oscillations
- Thermodynamics and Statistical Mechanics
- Quantum Mechanics
- Electrodynamics
- Advanced Laboratory

Honors / Awards

- All-Academic Honors (University Athletic Association)
- All-Star First Team Athlete in Northeast Fencing Conference
- Mexican Fencing National Champion

Scholarships and Fellowships

Landsman Charitable Foundation Endowed Scholarship — February 2016
- Awarded to a Brandeis undergraduate student who excels in the sciences and shows great interest in engineering

Materials Research Science & Engineering Centers (MRSEC) Fellowship — May 2016
- To support project on DNA-induced self-assembly systems, their equilibrium states, and phase transitions

Presentations

"Quantitative Study of Linker-Mediated Binding Between DNA-Coated Colloids," poster presentation, Summer Science Research Program, Brandeis University, Waltham, MA, August 2016

Skills

- Java
- HTML
- CSS
- JavaScript
- Matlab
- Mathematica
- Object Oriented Programming
- Lean Startup Methodology
- Data Structures and Algorithms
- Source Control (GIT and SVN)
- Photoshop/Illustrator
- Windows/Macintosh

Experience

TIBCO Software Inc., *Software Engineering Intern,* Waltham, MA — June 2017 - August 2017
- Used TIBCO's software to design and develop the demo that ships with StreamBase Studio software
- Customized the UI through HTML and JavaScript plug-in's
- Develop a Support Wizard (Java) and extended the Eclipse product (plug-in development)
- Participated in engineering practices using source control tools and working on "tickets"

Brandeis University, *Complex Fluids Researcher,* Waltham, MA — February 2016 - Present
- Researcher at Rogers Lab studying soft matter and self-assembly processes
- Use of microscopy techniques in order to identify patterns in equilibrium states and phase transitions
- Use of graphic methods to process and analyze experimental data
- Write Matlab programs to simulate system behavior for any combination of physical parameters
- Derive mathematical models from fundamental chemical and physical principles to explain complex systems

Brandeis University, *Note Taker,* Waltham, MA — February 2016-May 2016
- Note-taking for a student with documented disability for the course "Quantum Mechanics"

The Justice, *Editorial Assistant,* Waltham, MA — October 2014 - February 2015
- Photographer for the independent student-run Brandeis University newspaper
- Participated in weekly 10 hour sessions where all editorial teams collaborated to produce the week's issue
- Photographic editing with Photoshop software
- Digital design of newspaper covers and layout

Leadership / Activities

- **Captain and member** of Brandeis Fencing Team (NCAA) — August 2014 - Present
- **Captain** of the Fencing State of Mexico Squad — May 2009 - August 2015
- **Member** of the Fencing National Team — February 2014 - August 2015

Projects

Web - Monty Hall Problem Simulator (HTML, CSS, JavaScript) — June 2017
This is a small one-day project whose purpose was to practice some HTML, CSS, and JavaScript (using jQuery) after I taught it to myself. I coded a site where the famous Monty Hall game is simulated. Here I explain why it's probabilistically better to always change doors after Monty Hall has shown you one of the "Goat Doors".
Project site: https://fierce-garden-61327.herokuapp.com/

Artificial Intelligence - Knowledge Base (Java) — March 2017
Created and implemented a data base of nouns, where the expression types "<noun> is a <noun>" and "<noun> has a <noun>" are recognized and stored within a knowledge tree. The computer can then recognize expressions, and by traversing the graph, determine if an element "is" or "has" a second element.

A Simulator - Emulates Flexible Polymer Molecules in Solution (Java) — February 2017
Coded a program that simulates the generation and behavior of flexible polymer molecules of any desired length (number of monomers) and extracts many different statistical characterizations of the polymers. The molecules can grow randomly in a 2-dimensional space or a 3-dimensional space.

Data Structures - A Game of UNO (Java) — February 2017
Designed and coded a game of UNO using principles of Object Oriented Design and my own implementation of data structures.

Web - A Personal Website (HTML, CSS, JavaScript) — February 2017
Implemented an HTML/CSS/JavaScript template and designed a personal website.
Project site: https://guillonapa.github.io/

Software Startup - A Database of Criminal Records + AI — December 2016
Used the Lean Startup Methodology to achieve product-market fit of a new software company as part of a class project. Structured a plan for a company that would generate a unified database for crime in the US (and eventually other countries) and create an AI to help foreign visitors understand safety and crime when traveling to new cities and countries. Worked in a team of four and followed agile methods.