

Rafael Lizarralde

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Education

University of Massachusetts Amherst

2015–2017

MS, Computer Science, GPA: 3.967

Amherst, MA

- o Concentration in artificial intelligence, focusing on machine learning in many different applications
- o Numerous team projects in software engineering, machine learning, education, and robotics

Cornell University

2010–2013

BS, Biological Engineering, GPA: 3.865

Ithaca, NY

- o Concentration in bioprocess engineering, focusing on genetic engineering
- o Took advanced electives in plant biochemistry, computational linguistics, and computer science

Projects

Robot Soccer (Robocup SSL)

2017

Programmer

Amherst, MA

- o With no prior robotics experience, did extensive literature review
- o Wrote review paper chapter on the state of the art in strategy algorithms in Robocup SSL
- o Implemented Skills-Tactics-Plays strategy layer in C++/Lua for our robots

Visual Vote Counter

2014

Programmer, Entrepreneur's Organization, "Shark Swim" event

New York, NY

- o Developed system for automatically counting votes in an auditorium based on images taken from stage
- o Deployed at "Shark Swim" event to count multiple rounds of voting for over 200 entrepreneurs

Cornell International Genetically Engineered Machines (iGEM)

2011-2013

Project Co-Leader, 3D Animator

Ithaca, NY

- o Co-lead team, implementing new management structure and recruiting 20 new members
- o Designed 3D animation in Autodesk Maya showing biomolecular interactions central to our project
- o Received awards for Best Human Practices, Best Wiki, and were Regional Finalists

Project Euler

2009–Present

- o Starting when I first learned programming, solved problems in Java (later Mathematica and Lua)
- o Solved 131 problems (top 0.737% of 700,000+ users who have solved a problem)

Experience

University of Massachusetts Amherst

2015–2017

Teaching Assistant, Research Assistant, Center for Knowledge Communication

Amherst, MA

- o Added collaboration to keep students engaged with an online K-12 mathematics tutoring system
- o Built authoring system for non-programmers to design HTML5 math problems
- o Published analysis of log data, uncovering the effect of different kinds of tutor responses to students
- o TA'd for an introductory programming class, designing and running class exercises

Cornell University

2010–2013

Research Assistant, Metabolic and Signal Engineering Laboratory

Ithaca, NY

- o Improved bacterial targeted mutagenesis platform, increasing probability of useful mutations
- o Engineered hybrid DNA polymerase with better mutation spectrum, adding compatibility with *E. coli*

Cornell University

2009

Programming Intern, Sol Genomics Network

Ithaca, NY

- o Improved Perl-based web tools for analysis of tomato family genomes
- o Converted project to Moose, an improved object system for Perl, and trained the team to use it