

# MICHAEL F. PÉREZ

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## EDUCATION

**Columbia University, Fu Foundation School of Engineering and Applied Science**  
BS in Computer Science, GPA 3.1/4.0

New York, NY  
Expected May 2020

**Archbishop McCarthy High School**  
High School Diploma, Magna Cum Laude, GPA 3.9/4.0

Southwest Ranches, FL  
May 2016

## SELECTED COURSEWORK

- Spring 2017: ENGI E1006 Computing for Engineers and Applied Scientists, UN2010 Linear Algebra
- Fall 2017: COMS 3134 Data Structures in Java, COMS W3203 Discrete Math, COMS W1004 Introduction to Computer Science
- Spring 2018 (planned): COMS W3157 Advanced Programming, COMS W3261 Computer Science Theory, COMS W4111 Introduction to Databases, CSEE W3827 Fundamentals of Computer Systems

## PROJECT EXPERIENCE

**Art of Engineering Class, Columbia University**  
Department of Industrial Engineering/Operations Research

New York, NY  
March 2017

- Learned how to price options of stock prices using the binomial lattice model (BLM)
- Using the BLM, derived the Black-Scholes-Merton option pricing formula in discrete time
- Coded a method to numerically estimate the price of options, Monte Carlo Simulation, on MATLAB

**Engineering Experience Program, Massachusetts Institute of Technology**  
Underwater Robotics

Cambridge, MA  
August 2015

- Designed multiple underwater remotely operated vehicles (ROVs) on Autodesk Inventor
- Created the ROVs using PVC pipes and other inexpensive materials, and compared the designs
- Presented findings to fellow Engineering Experience program participants at MIT

**Department of Computer and Information Science and Engineering, University of Florida**  
“Creating a 3D Model of the Stomach for Use with Haptic Interfaces”

Gainesville, FL  
June – July 2015

- Created a 3D stomach-and-spleen model on Blender to support surgery simulations by prospective surgeons
- Derived the univariate formulas for the energy and force of curved surfaces in Simulation Open Framework Architecture (SOFA), so that SOFA can represent 3D models more accurately using curved surfaces instead of quadrilaterals
- Presented research to fellow UF research program participants, and to UF faculty at the STEM Research Speaker Competition at the Florida Junior Science, Engineering, and Humanities Symposium in January 2016

## PROGRAMMING PROJECTS

- See [www.michaelfperez.com](http://www.michaelfperez.com)

## WORK EXPERIENCE

**Dodge Fitness Center, Columbia University**  
Lifeguard

New York, NY  
September 2016 – Present

- Maintained a safe and secure environment by enforcing facility policies and procedures
- Constantly supervised patrons using pool
- Served patrons by attending to their needs and having a positive attitude

**Camp Young Judea Sprout Lake**  
Lifeguard

New York, NY  
July 2017 – August 2017

- Observed groups of about twenty children aged three through nine as they learned to swim and played in a splash pool
- Helped prevent injuries by teaching children safe swimming practices and attending to injuries the children sustain

**Weston YMCA Family Center**  
Lifeguard

Weston, FL  
June 2016 – August 2016

- Maintained a safe and secure environment by enforcing facility policies and procedures
- Constantly supervised patrons using pool

## SKILLS

**Applications:** AutoCAD, Mathematica, PowerPoint, Excel, and Blender

**Programming Languages:** Java, Python, HTML, CSS, MATLAB, and Mathematica

**Spoken Languages:** Native English and Native Spanish

**Certifications:** CPR, AED for Professional Rescuers, First Aid, and Lifeguarding by Red Cross