Jan-Paul V. Ramos

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Education

Cornell University **2021 - 2025**

Bachelor of Arts in Mathematics and Computer Science *Ithaca, New York*

Relevant Coursework

- CS 2112 (OO Design and Data Structures Honors)
- CS 2800 (Discrete Structures)
- CS 4860 (Applied Logic) [**Audit**]
- MATH 2230 (Theoretical Linear Algebra and Calculus)
- CS 7890 (Seminar in Theory of Algorithms and Computing)
- CS 7190 (Seminar in Programming Languages)

Experience

Google Computer Science Summer Institute **June 2021 – August 2021**

Scholar *Remote*

- Participated in a 4-week intensive computer science summer program for high-achieving students, went through curriculum taught by Google engineers, and delivered a final project presentation to Google employees.
- Utilized: JavaScript, p5.js, node.js, socket.io

Internship Research/Engineering Apprenticeship Program **June 2020 – July 2020**

Researcher *Río Piedras, Puerto Rico*

- Learned about the applications of physics in electronics with doctoral physics students at the University of Puerto Rico, and developed several Arduino (microcontroller) projects and made a final report and own project demonstrating the functionality of an Arduino.
- Utilized: C++, Arduino

Projects / Research

Domain Specific Language for differential equations with Scott-Strachey semantics **Oct 2020 – March 2021**

Click For Project Here

- Created a domain specific programming language for solving differential equations, and developed the denotational semantics of the language.
- Awards won:
  - Most Outstanding Exhibit in Science, Technology Engineering and Mathematics from Yale University.
  - Mu Alpha Theta Award
  - Regeneron International Science and Engineering Fair 2021 Finalist
- Utilized: TypeScript, PEGjs, JavaScript, Haskell, HTML/CSS

Calc 2: A Concatenative Oriented Programming Language **June 2020 – July 2020**

Click For Project Here

- Created a stack based language with pattern matching. Everything is an "expression", which is just a sequence of instructions, like pushing something onto the stack, popping something, or calling a function.
- Utilized: Raku (Perl6)

Pythagorean Triples in the Pascal Triangle: A computational and algebraic approach Sept. 2019 – February 2020

Click For Project Here

- Developed an equation for expressing Pythagorean Triples in terms of Pascal's Triangle, and created a C++ command line program for showing the algorithm explicitly. Used Coq for the formal proof.
- Awards won:
  - The Office Naval Research Science Award
  - Mu Alpha Theta Award
  - Regeneron International Science and Engineering Fair 2020 Finalist
- Utilized: C++, Coq

Technical Skills

Languages: Python, C++, Java, Ruby, Crystal, OCaml, Nim, Rust, Raku, Haskell, Elixir, Coq, HTML/CSS/JavaScript, Prolog, Mathematica, MATLAB, LaTeX

Libraries/Frameworks: TensorFlow, Numpy, p5.js, Pandas