

# Santiago Perez Lugo

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## EDUCATION

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### University of Virginia

May 2026

*Bachelor of Science in Computer Science | Minor in Business*

GPA: 3.85 | Major GPA: 3.96

Relevant Courses: Machine Learning, Software Development, Computer Systems Organization II, Data Structures and Algorithms II, Discrete Mathematics, Probability

## EXPERIENCE

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### Incoming Software Engineer Intern | Baltimore, MD

May 2025 - August 2025

*T. Rowe Price*

### Probability Teaching Assistant | Charlottesville, VA

August 2023 – Present

*UVA Applied Mathematics Department*

- Engage with 100 students in a math class answering questions and explaining complex probability concepts
- Host office hours and manage over 150 grading tasks weekly

### Undergraduate Researcher | Charlottesville, VA

March 2024 – December 2024

*UVA Computer Science Department*

- Develop a baseline database for binary analysis by aggregating over 100 public GitHub repositories and Python libraries, enhancing the dataset for a binary stream comparison tool
- Conduct controlled perturbation experiments on over 100 unique software instances to systematically explore the impacts of code modifications
- Implement Graph Convolutional Network (GCN) models to analyze and align binary code, utilizing TensorFlow to process embeddings and PyTorch for handling graph-structured data

## PROJECTS

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### RecipePal | Django, PostgreSQL, Amazon S3, Heroku

- Developed a full-stack recipe management app with Django, allowing users to create, view, and manage recipes
- Implemented Google Login for secure authentication
- Utilized PostgreSQL for relational data storage and Amazon S3 for scalable cloud storage, handling user profiles, recipe metadata, and image uploads

### Ti-Hoops | PyTorch, MySQL, Node.js, Express, Amazon RDS

- Engineered a full-stack web application API using Node.js and Express for custom NBA game simulations
- Achieved a 66% accuracy rate in predicting the outcomes of 50,000 NBA games across 47 years of data using a PyTorch-based neural network
- Defined predictive accuracy to within 93% of actual points scored by integrating a multi-layer neural network with batch normalization, dropout layers for regularization, and optimization algorithms like Adam
- Ensured streamlined access to data stored in Amazon RDS via GET requests and deployed on Heroku

### Vista | PyTorch, MongoDB, React, Flask

- Developed a PyTorch-based recommendation model achieving an accuracy of 85% in predicting user preferences across a dataset of over 30,000 TV shows
- Utilized MongoDB for efficient storage and management of user profiles, TV show/movie metadata, and recommendation history
- Implemented a RESTful API using Flask to handle user requests, interact with the MongoDB database, and serve machine learning model predictions to the React front-end

## TECHNICAL SKILLS

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**Languages:** Java, Python, C/C++, SQL (MySQL, PostgreSQL), JavaScript, HTML/CSS

**Frameworks:** Git, PyTorch, React, Flask, Express, Node.js, Django, Linux (Ubuntu)

**Dialect:** English (Native), Spanish (Native)