

# LUKE COLOMBO

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## Education

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**Northeastern University, Khoury College of Computer Sciences**

**Boston, MA**

Candidate for B.S. in Computer Science & Cognitive Psychology

May 2025

**GPA: 3.7/4.0**, Dean's List

**Relevant Coursework:** Software Engineering (TypeScript), Natural Language Processing (Python), Database Design (MySQL), Networks & Distributed Systems, Algorithms & Data Structures (LaTeX)

## Skills

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**Languages:** Java | Python | MySQL | JavaScript | React | Scheme/Racket | LaTeX | Bash

**Software:** PyTorch | OpenCV | Visual Studio Code | Microsoft Excel | SPSS Statistics

**Concepts:** Git | TCP/IP | Linux Command-Line | Neural Networks | NoSQL | NLP | Reinforcement Learning

## Experience

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**Software Engineering Intern** *Agrofocal*

San Francisco, CA | May - Dec. 2024

- Developed AI-driven computer vision tools to support sustainable agriculture through crop monitoring
- Utilized Linux shell scripts to automate inferences, enhancing model evaluation and improving accuracy through advanced filtering algorithms and model tuning
- Collaborated on end-to-end development of a novel ground-detection neural network, including data collection, training, evaluation, and system integration
- Optimized model performance, doubling pipeline processing speed while maintaining accuracy

**Computer Science Studio Manager** *Digital Ready*

Boston, MA | Jul. - Dec. 2023

- Mentored and taught 40+ high-school students in Python, OpenCV, UI/UX, and ML as part of a technical summer bootcamp
- Managed a team of Lab Leaders, created a curriculum emphasizing innovation and real-world applications
- Organized daily lectures and activities; oversaw delivery of student projects in programming and robotics

## Projects

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**Settlers of Catan Agent (Python)**

Dec. 2024

- Created a Q-learning agent for Catan, implemented decision-making algorithms based on game state
- Built custom simulator and GUI using Pygame to visualize and test agent performance

**Spreadsheet (TypeScript, React)**

Nov. 2024

- Designed a responsive web-based spreadsheet with interactive formatting, dynamic chart creation, and predictive LLM-driven autofill
- Applied Agile methodologies and OO design patterns in a team of 4; integrated unit testing and CI/CD

**Animal Shelter Database (MySQL, Python)**

Apr. 2024

- Developed and implemented a management system to track applications at an animal shelter, using a normalized SQL schema with triggers and stored procedures
- Constructed a Python CLI interface with role-based access for volunteers, managers, and visitors

**Connect Four (Java)**

Feb. 2023

- Simulated an interactive Connect Four game with a computer opponent using the strategy design pattern
- Implemented MVC architecture and built a GUI with Java Swing to separate logic and interface control

## Extracurricular Involvement

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**Tastemakers Magazine:** Writer of editorials and commentary on the music industry, albums, and concerts

**Interests:** Proficient in Spanish, Jazz Piano, Mountain Biking, Urban Planning, Music Production, Basketball