

# 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)

## Technical Knowledge

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

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

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

## Work Experience

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**Software Engineering Intern** *Agrofocal*

San Francisco, CA | May - Dec. 2024

- Contributed to developing AI-driven crop monitoring software for agricultural efficiency and sustainability
- Utilized Linux command-line scripts to evaluate and improve computer vision models for crop detection, increasing accuracy with advanced filtering techniques
- Collaborated on end-to-end development of a ground detection neural network, including data collection, training, evaluation, and post-processing
- Integrated and optimized the above model, maintaining accuracy while reducing runtime by 100%

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

Boston, MA | Jul. - Dec. 2023

- Supervised and mentored 40 high-school students in a Computer Science Bootcamp course
- Organized daily lectures and activities; created a curriculum focused on innovation and problem solving
- Oversaw deliverables such as a Python card game project, OpenCV robotics project, and Google certificates in IT and UX Design

## Personal & Academic Projects

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**Settlers of Catan Agent**

Dec. 2024

- Created a Q-learning agent to play a simplified version of Catan, choosing action based on game state
- Built a simulator in Python for handling game logic, used Pygame module for a GUI

**Spreadsheet**

Nov. 2024

- Designed a TypeScript-based spreadsheet application with an interactive React frontend, following OOD principles and the Agile design process
- Implemented conditional formatting, dynamic chart generation, and LLM-driven predictive autofill

**Animal Shelter Database**

Apr. 2024

- Developed an system to track animals, applications, and staff at an animal shelter using a SQL database
- Utilized MySQL for back-end procedures and triggers, Python for front-end functionality via a command-line interface with unique views for managers, volunteers, and visitors

**Connect Four**

Feb. 2023

- Simulated Connect Four in Java using MVC architecture and a GUI made with the Swing library
- Incorporated the strategy design pattern to add algorithms that let user play against the computer

## 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