

# Jesus Perez Sanchez

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## Education

### Yale University

*B.S. in Computer Science*

**New Haven, CT**

*Aug 2021 – May 2026*

**Coursework:** Data Structures & Algorithms, Machine Learning, Systems Programming, Computer Vision

**Activities & Awards:** President & Violinist of Mariachi Luz y Verdad; Office of Educational Opportunity STEM & FGLI Mentor; QuestBridge National College Match Recipient (< 1%)

## Technical Skills

**Languages:** Python, JavaScript, C, Java, Racket, SQL, HTML/CSS

**Frameworks & Tools:** React, Node.js, Express, MongoDB, PyTorch, TensorFlow, OpenCV, PsychoPy, Git

## Experience

### Yale School of Medicine, Levy Neuro Decision Lab

**New Haven, CT**

*Software Developer (Part-Time)*

*Apr 2025 – Present*

- Architected full-stack behavioral experiments (**PsychoPy**, **Node.js**, **MongoDB**) with a modular cross-platform framework serving 500+ participants, featuring real-time data collection and automated trial generation
- Developed risk assessment and image valuation systems with multi-phase experimental design and DB integration

### Universidad Complutense de Madrid

**Madrid, Spain**

*Research Assistant Intern*

*May 2025 – Aug 2025*

- Led qualitative DAO governance analyses reviewing whitepapers, proposals, Snapshot votes, and community discussions across 70+ blockchain protocols
- Synthesized findings and presented results to an international research team, including collaborators from Harvard's Berkman Klein Center

### Google Computer Science Summer Institute (CSSI)

**Remote**

*Software Developer Intern*

*June 2021 – Aug 2021*

- Built interactive JavaScript projects and delivered technical presentations as part of Google's CSSI program

### Silicon Valley Education Foundation

**San Jose, CA**

*Teaching Assistant & College Mentor*

*May 2021 – Aug 2024*

- Delivered computer science and mathematics instruction to 200+ K-12 students across summer programs, accumulating 400+ hours of direct teaching experience

## Personal Projects

### Album Cover Genre Classifier (Python, PyTorch, OpenCV, scikit-learn)

- Built end-to-end ML pipeline classifying 3,200 album covers into 4 genres, comparing 25 hand-crafted CV features (color histograms, GLCM texture, Haar cascade face detection) against deep learning approaches
- Achieved 40% test accuracy with fine-tuned ResNet-18 (vs. 30% Random Forest baseline); implemented Grad-CAM visualizations to interpret CNN attention patterns across genres

### Text-to-Image Pixel Art Generator (Python, PyTorch, CLIP, OpenAI)

- Built conditional latent diffusion model generating 16x16 transparent pixel art from text prompts for game development with custom dataset preprocessing
- Implemented 3-phase training pipeline: autoencoder (256D latent space), DDPM denoising, CLIP text conditioning with cross-attention mechanisms

## Leadership & Volunteering

### Develop for Good

**Remote**

*Product Manager*

*May 2024 – Aug 2024*

- Led cross-functional team migration from web wrappers to native Android/iOS applications for 250k+ user nonprofit platform, coordinating 6-person engineering team with our client's needs

### CodeHaven @ Yale

**New Haven, CT**

*Computer Science Tutor*

*Aug 2021 – Aug 2022*

- Tutored 60+ K-12 under-resourced students in Scratch programming fundamentals and introductory computer science concepts through weekly sessions