

# ARVIN BOZORGI

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## Education

*McDonogh High School*, Expected Graduation: 2027 | SAT: 1470 | Dean's List 2024, 2025

## Experience

### Glaucoma Classification Research, Internship with Dr. Mohammed Javidian

\*Drafting research paper with Dr. Javidian for publication. June 2025 - Present

- Annotated 1,500+ retinal images in Roboflow, trained a model to isolate optic nerve regions for focused glaucoma detection.
- Built a PyTorch classification model on positive/negative optic nerve images; tested augmentation techniques to address dataset imbalance.
- Logged and compared trial metrics in Weights & Biases to identify optimal augmentation methods.

### Conceptbytes Team, Developer August 2024 - Present

- Collaborated with a well known influencer and engineer to develop an innovative AI project featured on a professional platform, gaining significant attention.
- Was given commission and credit for work done.
- Skills: Python, Working with a development team, Mediapipe, OpenCV, Computer vision

### A Byte For All, Developer & Project Branch Director June 2025 - Present

- Led a team of student developers through community projects, such as web development. Created websites (HTML, CSS, JS) for nonprofits, businesses, and school clubs.

### High School STEM Center Tutor August 2025 - Present

- Selected through competitive interview based on STEM coursework and soft skills; tutor students during school hours, guiding them through problems without revealing solutions.

## Projects

### Computer Vision Chess Glasses, Project March 2025

- Trained a model to detect chessboard corners and warp live footage for analysis; tracked piece movement using binary thresholding and canny edge detection.
- Streamed video from Meta Raybans; displayed moves in real time with PyGame.

### Soccer Tic-tac-toe, Project [[Demonstration](#)] December 2024

- Hand-annotated 4,000+ images to train a computer vision model that tracks a soccer ball in real time. Used this to project a PyGame tic-tac-toe board onto a wall; detected ball impact location to register moves.
- Created an alternative (projector + laptop + webcam) to \$5,000 commercial systems.

**Warfields II Home Owners Association Website, Project [[Website](#)]** *June 2025*

- Designed and built a modernized website for neighborhood HOA. Prioritized accessibility for users of all tech levels; iterated based on board member feedback.

**Jarvis (Hand-Tracking Projected UI), Project [[Demonstration](#)]** *August 2024 - Present*

- Built a menu system and two arcade apps (Space Invaders, Brick Breaker) for Jarvis, an open-source Iron Man-style projected UI using OpenCV, MediaPipe, and PyGame.
- Sold apps to the project founder for \$200; featured on his Instagram page.
- Joined the official GitHub developer team; ongoing contributor to the project.

## Leadership

**Competitive Programming Club, President & Founder** *May 2025 - Present*

- Lead discussions on competition strategy and coordinate teams to represent our school in regional programming contests.

**Founder of Machine Learning Club, President & Founder** *May 2025 - Present*

- Founded club teaching neural network programming and machine learning applications; create presentations and Python code walkthroughs for beginner-level models.

**Founder of 3D Design Club** *August 2024 - May 2025*

- Founded and led a CAD and 3D printing club teaching Fusion 360 and prototyping

## Technical Skills:

- **Programming:** Python, Java, C, C#, C++, HTML, JavaScript, CSS, Lua, SQL
- **AI & Machine Learning:** TensorFlow, PyTorch, OpenCV, MediaPipe, Weights & Biases, Roboflow, Neural networks, facial recognition, hand tracking
- **3D Design & Prototyping:** Fusion 360, Blender modeling, 3D Printing
- **Game Design:** Unity, LÖVE, PyGame
- **Languages:** English (*native*), Farsi (*native*), Spanish (*learning*)
- **Certificates:** PCEP – Certified Entry-Level Python Programmer, HarvardX CS50

## Additional

- **Veteran Leadership Academy** *10th-11th*
- **Athletic Leadership Academy** *10th*
- **Squash Team** *11th*
- **Tennis Team** *10th-11th*