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.

Independent Author, *Terror Tales*   *May 2023*
- Wrote and independently published a book containing five original short stories
- Managed the full writing, editing, and Amazon (KDP) publication process

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*