

# Aidan Can Erguner

+90 541 678 01 41, aidanerguner.uni@gmail.com

---

|                |               |             |                              |
|----------------|---------------|-------------|------------------------------|
| Place of birth | New York, USA | Nationality | American, Portugese, Turkish |
|----------------|---------------|-------------|------------------------------|

---

## PROFILE

I'm an IBDP student who loves to build. I've channelled my passion for building with FRC over the course of my high school years. As Captain of the Mechanical & CAD teams and more recently, as a Youth Mentor, I've turned design ideas into real robots which won several national awards during my time with the team. Aside from that, I enjoy creating my own personal projects which intertwine my passion for mathematics, physics, and computer science. I love solving problems with solutions I can measure, test, and improve.

---

## EMPLOYMENT HISTORY

|                     |  |          |
|---------------------|--|----------|
| Jul 2023 — Aug 2023 | External Software Development Intern, Enerjisa Enerji A.Ş. | Istanbul |
|---------------------|--|----------|

- Gained valuable experience working within a specific industry, applying learned concepts directly into relevant work situations.
- Analyzed problems and worked with teams to develop solutions.
- Explored new technologies and approaches to streamline processes.

---

## EDUCATION

|                     |  |          |
|---------------------|--|----------|
| Jul 2022 — Jun 2026 | International Baccalaureate Diploma /Anatolion High School Diploma, Sev American College | Istanbul |
|---------------------|--|----------|

---

## SKILLS

|            |            |
|------------|------------|
| Python     | Solidworks |
| Java       | Onshape    |
| HTML       | MySQL      |
| JavaScript | CSS        |

---

## EXTRA-CURRICULAR ACTIVITIES

|                     |  |
|---------------------|--|
| Sept 2022 — Present | Youth Mentor/Mechanics & CAD Lead, X-SHARC #6838 |
|---------------------|--|

Led Mechanical & CAD for our FIRST Robotics Competition team. Designed robots in CAD, coordinated build schedule, and trained younger students by holding workshops. Our robots won multiple regional events and qualified for Worlds 4 times.

|                     |          |
|---------------------|----------|
| Jun 2025 — Oct 2025 | BusRoute |
|---------------------|----------|

Designed and led BusRoute, a Java app that optimizes school bus routes. Implemented a TSP-style algorithm with the Google Maps Distance Matrix API, built a Swing UI and MySQL database, and tested with real Istanbul stops to cut travel time while learning full-stack development. In negotiations to sign up schools.

|                     |                      |
|---------------------|----------------------|
| Jun 2025 — Jul 2025 | Small Neural Network |
|---------------------|----------------------|

Independently built a small neural network library from scratch in Python (forward/backprop, gradient checking, SGD, regularization). Trained models on toy tasks, wrote tests and documentation, and used it to really understand how deep learning works under the hood.

|                     |                              |
|---------------------|------------------------------|
| Feb 2025 — May 2025 | Variable Mass Atwood Machine |
|---------------------|------------------------------|

Conducted research and designed a variable-mass Atwood machine. Derived models for granular flow, implemented a Runge–Kutta numerical solver, built an experiment with a leaking sand bottle and smartphone accelerometer, and compared model predictions to data using RMSE and residual analysis.

|                     |   |
|---------------------|---|
| May 2024 — Present  | <p>Membership Committee President, Galatasaray 100th Year Rotary Interact Club</p> <p>Led membership for the club: recruited and interviewed new members, ran info sessions, tracked participation, and coordinated with the board to staff service projects. Helped shape club culture and kept members active and engaged.</p>                  |
| Jul 2024 — Aug 2024 | <p>Forest Fire Spread &amp; CO Simulator</p> <p>I designed and coded a Python simulator that models forest fire spread and CO emissions using cellular automata, wind, and fuel density. I analyzed different scenarios, graphed impacts, and wrote documentation as a way to explain climate risk and data-driven modeling.</p>                  |
| Jan 2025 — Feb 2025 | <p>StockPath Lab – Stochastic Stock Price Modeling</p> <p>Independently built “StockPath Lab”, a Python toolkit that downloads real stock data, calibrates stochastic price models (GBM and regime-switch volatility), runs Monte Carlo simulations, and visualises where models match or fail, then improves them based on my analysis.</p>      |
| Apr 2025 — Jul 2025 | <p>Approximating the Perimeter of an Ellipse</p> <p>I investigated different methods for approximating the perimeter of an ellipse. I derived the exact elliptic-integral form, implemented Ramanujan formulas, series, and numerical methods (Simpson, trapezoid, polygon), then benchmarked their errors against an AGM-based “true” value.</p> |

---

## RECOGNITION & AWARDS

|                       |   |
|-----------------------|---|
| Sept 2025 — Sept 2025 | <p>Physics Turkey Champion, Harvard Crimson Physics Bowl</p> <p>Competed in the Harvard Crimson Global Quiz Bowl, an international academic competition. Finished as <b>MENA + Africa Individual 2nd Place</b> and <b>Turkey Individual Champion</b>. Also received team awards as <b>MENA + Africa Team 2nd Place</b>, <b>Turkey Team Champion</b>.</p>  |
| Sept 2025 — Sept 2025 | <p>Mathematics Merit Award, Harvard Crimson Math Bowl</p> <p>Earned a national-level mathematics distinction by placing <b>3rd in Turkey</b> as part of a team, and also receiving an <b>Individual Merit Award</b> for strong individual performance in the same competition.</p>  |
| Sept 2022 — Present   | <p>FRC Awards X-SHARC #6838</p> <p>Competed in FIRST Robotics Competition (2021–2025) nationally and internationally, progressing from Mechanical &amp; CAD Team Member to Mechanical &amp; CAD Captain and Youth Mentor. Earned Team Spirit Award (Izmir Off-Season, 2021). Finalist (Pendik Off-Season, 2022) and Quarter-Finalist (Izmir Regional, 2022). Won Engineering Inspiration Award at the San Francisco Regional and Houston World Championship (2022), returning to Houston Worlds (2023). Won Bosphorus Regional (2023) as team member and Halic Regional (2023) as captain. Finalist at Halic Regional (2024). Served as Alliance Captain at Bosphorus Regional (2025), mentored a Finalist finish at Halic Regional (2025), and attended Houston Worlds (2025) as a mentor.</p> |

---

## SUMMER COURSES

|                     |   |
|---------------------|---|
| Jul 2024 — Jul 2024 | Mechanical Engineering Frontiers Program, Worcester Polytechnic Institute   |
| Jan 2024 — Feb 2024 | Introduction to Computer Engineering, Kadir Has University Winter School  |
| Jul 2023 — Aug 2023 | Machine Learning with Artificial Intelligence, Quantum Physics, Successful Management in Business, Introduction to Computer Programming with Python, Sabanci University |