

Rishi Bala

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Education

The University of Texas at Austin, Austin, Texas

August 2025 – May 2029

- BS: Electrical and Computer Engineering Honors, BBA: Canfield Business Honors

Newark Academy, Livingston, New Jersey

September 2021 – June 2025

- Cum Laude Society, GPA: 4.64/4, 36/36 ACT, IB Diploma Recipient, AP Scholar, National Merit Commended Scholar

Experience

Longhorn Racing – Electric

August 2025 – Present

Electronics Team Engineer (Competing in the Formula SAE International Competition)

- Applied hardware principles like PCB design and high-level electrical system design and integration to support data collection.
- In charge of designing the Thermal Sensor Module; created a 6-layer PCB integrating temperature sensing and radiator fan control.
- Developed embedded firmware for sensor data and fan control; selected from over 800 UT applicants with a 5% acceptance rate.

Competitive VEX Robotics | Summit, New Jersey

September 2021 – May 2025

Captain, Lead Builder, [Design/CAD](#), [Engineering Notebook](#)

- Captain of a six person VEX team; spent 20+ hours each week holding team meetings for our robot and mentoring younger students.
- Employed CAD software such as Autodesk Fusion 360; documented each robot iteration in an award-winning engineering notebook.
- 1x World Finalist, 1x Worlds Division Champion, 1x Worlds Division Finalist, 2x New Jersey Tournament Champion

New Jersey Institute of Technology Intern | Physics and Mechanical Engineering Laboratory

June 2024 – August 2024

Intern – Prof. Nuggehalli Ravindra and Prof. Balraj Mani

- Researched and worked on two review papers detailing [magnetotactic bacteria \(MTB\)](#) and ferrofluids as a primary author.
- Utilized CAD to design and produce an array of milli-scale electromagnetic coils driven by H-bridges to control miniature robotic arms.

Minuteman Newspaper

October 2022 – May 2025

Editor-in-Chief (12), Editor (11), Staff Writer (10)

- Led weekly meetings for a 70 person staff; managed contracts with the printing press; responsible for writing/editing articles.

PACT – Program in Algorithmic and Combinatorial Thinking

June 2023 – August 2023

Studied under Prof. Rajiv Gandhi

- Studied discrete mathematics and theoretical CS; assessed in topics such as combinatorics, probability, graph theory, and algorithms.

VEX IQ Instructor | Summit, New Jersey

November 2021 – Present

Teacher, Judge, Referee

- Taught VEX IQ students throughout the year, introducing students to basic robotics techniques and block coding.

Projects | www.rishibala.com

6502 Breadboard Computer

August 2024 – December 2024

[Hardware Pictures](#)

- Built a breadboard computer using the classic 6502 microprocessor; programmed simple instructions in assembly.
- Created a custom clock module using a separate Arduino Uno; used an Arduino Mega to communicate with the 6502 computer.
- Utilized an EEPROM chip to store machine code and communicate with the processor; used several LCDs and an array of electronics.

Word Hunt Robot

July 2024

[Github Repository](#) | [Demo](#)

- Created an Arduino robot that uses three servo motors running on a voltage divider to play the popular iMessage game Word Hunt.
- Used a custom, conductive stylus made from aluminum foil, electrical current from the Arduino, and a cut up pen.
- Built a Java program that finds all words via a Trie data structure of the Collins Dictionary; utilizes socket and serial communication.

JavaXchange

July 2023 – August 2023

[Github Repository](#) | [Demo](#)

- Developed a multithreaded mock stock market that records transactions, matches BUY/SELL orders, and uses serialization to communicate with trading bots running different strategies, such as EWMA or RSI, in an attempt to generate the most profit.
- Parses real historical data to create a Market Making Bot which sends a new order based off each AAPL price point every 10ms.

Additional Information and Skills

Technical Skills: Arduino, Java, C, Python, CAD, JavaScript, PROS, MongoDB, Node.Js, PCB Design

Honors: VEX Robotics World Finalist, World Division Champion, National Merit Commended Scholar

Interests: Pickleball, Motorsport, Drums, Jazz, Tennis, Go-Karting

Work Eligibility: Eligible to work in the U.S. with no restrictions