ATUL ERRABOLU

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ACADEMICS

Vista Ridge High School, Cedar Park, TX (Class of 2021)

- **Rank: 6/551** (Top 1.09%),
- **Unweighted GPA: 4.0/4.0**,
- **Weighted GPA: 5.66/6.0**
- **SAT: 1520,** (800 Math, 720 EBRW)
- **PSAT/NMSQT Index: 218/228**

Austin Community College

- Completed/currently enrolled in the following classes: US History (1302), Discrete Mathematics (2305)
- Planning on taking the following classes next semester: US History (1301), Calculus III (2415)

Academic Achievements

- **National Merit Commended Scholar (12th)**
  - Awarded to students within the top 34,000 of all 1.6 million students to take the 2019 PSAT (1 point away from being a national merit semi-finalist in Texas.)
- **AP Scholar with Distinction (11th)**
  - Granted to students who receive an average score of at least 3.5 on all AP Exams, and scores of 3 or higher on five or more of these exams.

AP Scores

- AP Computer Science A – **5**
- AP Calculus BC - **5**
- AP Physics C: Mechanics - **5**
- AP Physics C: Electricity & Magnetism - **5**
- AP Chemistry - **5**
- AP Macroeconomics - **5**
- AP Human Geography - **4**
- AP Language and Composition - **3**
- AP United States Government and Politics - TBT
- AP Microeconomics - TBT
- AP Statistics - TBT
- AP Art History - TBT
- AP Literature and Composition - TBT

* TBT - To be determined (taking the tests this year)

EXTRACURRICULAR ACTIVITIES AND ACHIEVEMENTS

Band Member: (9th, 10th, 11th, 12th)
[36 weeks/year: 9th-11th -> 15 hours/week, 12th -> 6 hours/week]

- Participated in the Vista Ridge concert and marching band for all 4 years. (2017-Current)

    - Placed in the **top band**, wind ensemble, for 3 of those years.
- Received **1st, 4th, and 8th** chair at the **TMEA region** band competition. (2017-2020)
    - Received **6th and 7th** place at the **TMEA area** band competition
- Awarded **1st place UIL state** marching band as a flute marcher. (2018)
- Received a **1 (highest score)** in the **YAC**, a local solo competition, for every year in high school. (2017-2020)
- Received a **1 (highest score)** at the **UIL solo** and ensemble **region** competition where I qualified for the **UIL state solo** and ensemble competition, which was cancelled by Covid-19. (2019)

Robotics Club Co-Software Lead & FTC Competitor: (10th, 11th, 12th)
[36 weeks/year: 10th-11th -> 6 hours/week, 12th -> 3 hours/week]

- **Participated** on Vista Ridge robotics teams **and competed in the FTC**, First Tech Challenge, robotics **competitions all 3 years.** (2018-Current)
- **Developed open source Java applications (Github Repository)** that utilized open source computer vision libraries such as OpenCV and Vuforia, in order to compete in the autonomous and TeleOp portions of the FTC competitions. (2018-Current)
- **Architected design documents**, as **Co-Software lead**, which reviewed the algorithms, technologies, and problems our software team solved. (2019-Current)
- **Managed software members** and directed them on proper software implementation practices, communication, and leadership principles. (2019-Current)
- **Collaborated** and worked with **hardware** members to **engineer mechanical solutions** or **use software to overcome physical limitations.** (2019-Current)
practices, communication, and leadership principles.
- **Awarded team alliance captain** in our regional robotics division which allowed our team to compete in order to qualify for worlds. (2019)

Austin Regional Science Fair Competitor: (9th, 11th)
[18 weeks/year: 9th & 11th -> 3 hours/week]

- Awarded **5th place** at **the Austin regional science fair** in **physics** for research in determining determining bridge strength through analysis of compressive and tensile forces. (2017/2018)
    - Received **1st place** in the **physics** division at the **Vista Ridge science fair**.
- Awarded **5th place** at the **Austin regional science fair** in **computer science** for research in the application of **LSTM neural networks** in predicting stochastic human behavior. (2019/2020)
    - Machine learning model built using **Keras**, a machine learning library.
    - Received **1st place** in the **computer science** division at the **Vista Ridge science fair.**

Personal Computer Science Projects Software Developer: (9th, 10th, 11th, 12th)
[36 weeks/year: 9th-10th -> 2 hours/week, 11th-12th -> 3 hours/week]

- **Zooba** – **Course Management Site** (Github Repository) (2019/2020)
    - Over **6000+** lines of code.
    - Co-developed a site that includes **a course recommendation algorithm** (adapted from Dijkstra's shortest path algorithm), **assignment notification, social networking functionality, and automatic GPA calculation.**
    - Scraped my school's grades and assignments database (Home Access) and built a directed weighted graph relationship for courses, enabling us to create the course recommendation algorithm.
    - Built the site with **Python, Flask, JavaScript, HTML & CSS, BeautifulSoup, and SQLite.** (2020)

- **Dijkstra's Visualizer** – Shortest path finding site (GitHub Repository) (2020)
  - Developed an **interactive graph** environment for a **Dijkstra's shortest path algorithm visualizer.**
  - Built the site with **JavaScript** and **P5.js** graphics library.
- **Chess Engine with Artificial Intelligence** (Github Repository) (2020)
  - Developed a **chess engine** and implemented **AI using the minimax algorithm**.
  - Designed the application with proper object-oriented design paradigms.
  - Built the application in **Java**.
- **SummarizeIt** - **Text Summarization Algorithm w/ Sentiment Analysis** (GitHub Repository) (2019)
  - Developed a text summarization algorithm using natural language processing libraries to **determine sentiment and summarize articles**.
  - Built the application with **Python, NLTK, TextBlob.**
- **Personal Portfolio Site** (GitHub Repository) (2019/2020)
  - Developed a site to **showcase my resume, GitHub projects, and general honors** I was awarded.
  - Built the site with **HTML & CSS** and **JavaScript.**
- **Platformer Video Game** (2017-2018)
  - Implemented **physics concepts** such as gravity, friction, and velocity and acceleration.
  - Developed basic **enemy AI** states and interactions.
  - Designed all the game's **pixel art** and background illustrations.
  - Built the game with the GameMaker engine using GML which its syntax is very similar to **JavaScript**.

Extracurricular Computer Science Classes: (11th, 12th)
[16 weeks/year: 11th -> 8 hours/week, 12th -> 6 hours/week]

- Completed the **Stanford algorithm specialization** (certificate proof) (2020)
  - Mastered the content in all 4 courses within the specialization where I learned the following topics:
    - → Divide and Conquer, Sorting and Searching, and Randomized Algorithms
    - → Graph Search, Shortest Paths, and Data Structures
    - → Greedy Algorithms, Minimum Spanning Trees, and Dynamic Programming
    - → Shortest Paths Revisited and NP-Complete Problems
  - Maintained an **A average**.
- Currently enrolled in a **discrete mathematics course** at Austin Community College (2020)

UIL Math and Science Club Member and Competitor: (11th, 12th)
[36 weeks/year: 10th -> 2 hours/week, 11th -> 1 hour/week]

- Attended weekly meetings to train for the UIL math and science competitions (2018/2019)
  - **Competed** in the competitions for the 2018/2019 academic year.
- **Assisted** students struggling with various **math, chemistry, and physics** concepts to improve their scores on the test. (2019/2020)

Spanish National Honors Society: (10th, 11th, 12th)
[18 weeks/year: 10th -> 1 hour/week, 36 weeks/year: 11th-12th -> 1 hour/week]

- Attended weekly meetings to speak **Spanish** and learn about **Hispanic culture**. (2019-Current)

COMMUNITY SERVICE

Volunteer, Sathya Sai Education Community Service (6/2014 - Current)
[150 hours]

- Participated in the community service for my Sathya Sai Education group, a religious Hindu education organization.
- **Volunteered** at **soup kitchens** and **psychiatric therapy centers**.

SKILLS

Languages:

- **English:** Full Proficiency
- **Telugu:** Full Proficiency
- **Spanish:** Intermediate Proficiency

Programming Languages:

- **Python:** Full Proficiency
- **Java:** Full Proficiency
- **JavaScript:** Full Proficiency
- **HTML & CSS:** Full Proficiency
- **C++:** Beginner Proficiency

Programming Frameworks:

- **Flask**
- **Keras**
- **BeautifulSoup**
- **SQLAlchemy**
- **P5.js**
- **NLTK**
- **TextBlob**

Computer Science Skills:

- **Data Structures and Algorithms**
- **Website and Applications Development**
- **Machine Learning and Neural Networks**
- **Object Oriented Programming**