

# Racheet Bedi

Katy, TX 77494

832-873-9980

racheetbedi25@gmail.com

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As a hard-working and detail-oriented student passionate about engineering, data analytics, and business, I endeavor to deepen my understanding in these fields. Being a committed volunteer, I effectuate my enthusiasm for community gardens by way of physical establishments and educational access through leadership.

## Education

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International School Hannover Region at **Hannover, Germany**  
**High School**

*August 2022 - July 2023*

Obra D. Tompkins High School at **Katy, Texas**  
**High School Diploma**

*Expected in May 2026*

## Honors/Awards

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**ISMTF Math Junior Competition—2<sup>nd</sup> Place**

*2023*

*International*

- Solved over 10 worksheets of competitive geometry, combinatorics, precalculus, and trigonometry problems.

**President's Volunteering Service Award, Young-Adult Division, Bronze**

*2023-2024*

*National*

- Volunteered over 110 hours with Empower & Connect.
- Designed, constructed, and implemented a small free library in a local park.
- Gathered over 60 books in a donation drive for the library.

**Future Business Leaders of America Data Analysis Second Place—Houston Regional**

*2024*

*Regional*

- Analyzed large vehicular data tables, organized a presentation, and pitched an EV implementation plan to multiple stakeholder judges.

**Computer Science Competition Clements High School—Mock UIL 8<sup>th</sup> Place**

*2024*

*Local*

- Answered Java Data Structures questions under a timed environment.
- Finished 7 Java competitive programming data structures tasks under 3 hours.

**Robotics Engineering Inspiration Award—San Antonio**

*2025*

*Regional*

- Taught engineering, as a team, to over 200 kids through summer robotics EV3 and coding camps.
- Personally taught a group of 3 kids WeDo and EV3 robot fundamentals, including building and block coding components.

**National Merit Semifinalist**

*2025*

*National*

- Earned a 1490 on the PSAT.

**Empower & Connect Most Innovative Project Award—App Development**

*2025*

*Local*

- Developed "MediMap" to find a user's nearby doctors based on their insurance and appointment requirements.
- Used Flutter (Dart) and Firebase.

# Engineering and STEM Experience

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**FTC & FRC Robotics Team 5427, Build Design Team**  
Grades 9-12

*5 hours per week/30 weeks per year*

- Designed and built FIRST Tech Challenge (FTC) robot structure for German school ISHR, placing second in a Stuttgart qualifier.
- Assisted in FIRST Robotics Challenge (FRC) CAD design of combined intake and shooter system for both 2023-24 Crescendo and 2024-25 ReefScape competition seasons with Texan school team 5427.
- Conducted CAM and CNC role, cutting metal for numerous parts, alongside crimping and soldering other components.
- **Reached worlds for the Crescendo and state for the ReefScape competition years.**
- **Earned Engineering Inspiration Award through robotics engineering camps.**

**Big Data and Deep Learning Technology Camp, Student Intern**  
Grade 11 (Summer)

*45 hours per week/1 week per year*

- Learned big data fundamentals, including machine learning, neural networks, and deep learning.
- Understood python (TensorFlow and Pandas) and statistical backing of convolutional neural networks (CNNs), including K-Means clustering.
- Constructed and trained CNNs on Fashion, Breast Cancer, CIFAR, and Structural Health Monitoring (SHM) data.
- Conducted CAM and CNC role, cutting metal for numerous parts.
- **Created capstone project, utilizing a python neural network for efficient age detection.**

**Baker Hughes IT Internship, Student Intern**  
Grade 9

*40 hours per week/1 week per year*

- Gained computer hardware assembly and AutoCAD fundamentals.
- Assisted in software issue ticketing system, routing requests and closing finished requests.
- **Disassembled, organized, and sorted 10+ PCs, isolating damaged parts for orders.**
- **Soldered 50+ circuit boards and designed multiple others.**

**ISMTEF Math Competition, School Team**  
Grade 9

*4 hours per week/15 weeks per year*

- Started and solved 10+ combinatorics, algebra 2, and precalculus competitive math problems.
- Solved 9 advanced geometry and trigonometry math problems in a group of 3.
- **Placed second as a school team in problems solved.**

**Computer Science Honor Society and Club, Advanced Java Team**  
Grades 11-12

*1.5 hours per week/27 weeks per year*

- Attended 30+ hours of advanced java data structures USACO preparation.
- Volunteered 9+ hours for local school competition setup and monitoring.
- **Competed in three local competitions, placing 8<sup>th</sup> in Clements CS Mock UIL.**

**Empower & Connect App Development Internship, Student Intern**  
Grade 12 (Summer & School Year)

*3 hours per week/16 weeks per year*

- Employed Flutter (Dart), Firebase data storage, and Google maps integration.
- Created "MediMap", a comprehensive app to find nearby doctors based on insurance and appointment needs.
- **Put MediMap under Google Play Store publishing process.**

# Leadership

## Lions Club International Leo's Club Chapter, *Vice President*

*3 hours per week/39 weeks per year*

Grades 10-12

- International nonprofit organization school chapter.
- Elected through an interview and voting process.
- Organized and led 15 volunteers in an Operation Gratitude campaign, **designing and mailing 40+ cards to military personnel and first responders**—receiving multiple thank-you letters back as well.
- Initiated a socks and cans donation drive, **gathering 143 sets of cans and 102 pairs of socks**, donated to local charities to serve underprivileged communities.
- Led a cards for teachers campaign for campus teachers, **presenting holiday thank-you letters to 11 teachers**.
- Pioneered a fully **comprehensive community garden** project of 9 volunteers:
  - Obtained multiple stacks of untreated wood, organizing and painting it with weather-resistant paint.
  - Created an **AutoCAD design** with accurate dimensions of the garden, surrounding fence, gate, and locking mechanism.
  - Used power tools such as a miter and table saw and drill to cut and build wood into desired design.
  - Drafted a fully comprehensive garden proposal, including plants, maintenance plan, and more, **presenting to two neighborhood BOD**.
  - Solidified implementation date as October 31.
  - **Forecasted yield as 65 pounds of herbs, native pollinator plants, lettuce, green beans, cucumbers, and tomatoes.**

## Learn to Be, *Underclassman Representative and Vice President*

*1 hour per week/30 weeks per year*

Grades 10-12

- National nonprofit organization school chapter.
- Elected through multiple essays and a meeting.
- **Recruited 10+ volunteer tutors and organized a book club donation drive of 50+ books for a local charity** as underclassman representative.
- Presented and led for a group of 30+ volunteers, both for meetings and interactive socials.
- Developed and integrated a point-card system, incentivizing participation and online tutoring membership by 15+ people, and **placing our club 1st, nationally, with 1,500 volunteering hours**, as Vice President.

## OTHS National Honor Society, *President*

*1 hour per week/32 weeks per year*

Grades 11-12

- National honors society school chapter.
- Elected through an essay and meeting process.
- **Organized, led, and presented to a group of 262 volunteer members** during meetings, socials, and other joint events.
- **Introduced 5+ new volunteering opportunities over 2 months**, including a Fort Bend County Library of Things drive.

## Ninth Grade Student Council, *Section President*

*1 hour per week/40 weeks per year*

Grade 9

- German school (ISHR) ninth grade student council board.
- Elected through a campaign and voting process.
- Directed communications between the grade faculty leader and student body, conveying any requests, issues, or general information both ways.
- Advocated for and implemented an **anonymous gratitude system of 15+ gratitude boxes**.
- Pioneered the establishment of an improved uniform exam scheduling system, due to large numbers of overlapping exams.
- **Chosen to serve on the school-wide grades 6-12 student council board.**
- **Selected out of 30+ student council representatives to present renovation plan to school BOD.**

# Community Service

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**Empower & Connect Little Free Library**, *Engineering Design Lead*  
Grade 10

*5 hours per week/25 weeks per year*

- National nonprofit organization.
- Initially conducted extensive market research for suitable park and neighborhood locations for small, personal-sized and shareable community library.
- Constructed **multiple AutoCAD models** of potential library models, including with different materials, numbers of shelves, book stoppers, and ground posts.
- Organized and implemented a book donation drive for all kinds of literature and textbooks, **gathering 60+ books**.
- Installed library within Mary Jo Peckham Park, providing **accessible literature of all ages to many people in a large radius**.
- **Volunteered for 120+ hours, earning the PVSA-YA Bronze.**

**OTHS National Honors Society**, *Volunteer*  
Grades 11-12

*1 hour per week/32 weeks per year*

- National nonprofit organization, school chapter.
- **Volunteered at 10+ organizations**, including for food accessibility at Houston Food Bank and Family Legacy; temporary medical housing, at Ballard House and Nora's Home; and various KatyISD school facilities.
- **Committed 30+ community service hours:**
  - Volunteering for such living facilities for tasks such as cleaning
  - Teaching WeDo and EV3 skills to a group of 3 children through robotics
  - Packaging 500+ bags for food marathons.

**Learn to Be**, *Online Tutor*  
Grades 10-12

*1 hour per week/30 weeks per year*

- National nonprofit organization, school chapter.
- **Tutored 3 students**, spanning from ages of 9 to 14, in subjects spanning from pre-algebra to algebra 1, geometry, writing composition, reading comprehension, energy transfer, and earth and space sciences (for topics such as fossilization).
- **Earned 30+ hours** as an online volunteer tutor, **increasing educational access for communities with lacking public education systems**.

# Business Experience

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**FBLA Data Analysis Competition**, *Team Competitor*  
Grade 10

*3 hours per week/20 weeks per year*

- National non-profit organization Future Business Leaders of America (FBLA).
- Analyzed large datasets of vehicular data including fuel usage, traffic accidents, and electric vehicle composition in various U.S. cities.
- Utilized excel for various organization, analysis, and EV forecasting requirements for detailed trend analyses.
- **Developed a fully comprehensive business plan** regarding the methodology, implementation, and potential benefits of hybrid electric vehicles in key hotspot areas.
- Learned proper business etiquette and fundamentals from business teachers.
- **Presented pitch deck to multiple stakeholder judges** representing fictional company Sun City Motors.
- **Placed second in Houston regional.**

**Leadership in the Business World—University of Pennsylvania Wharton**, *Student*  
Grade 12 (Summer)

*45 hours per week/3 weeks per year*

- **Annotated and discussed 5 Harvard Business Study case studies** including Dell, Coke, Walt Disney World, Tesla, and The Cleveland Clinic.
- **Finished 100+ hours of lecture**, fully covering an introduction of business University of Pennsylvania course curriculum.
- **Understood fundamental business concepts**, including, but not limited to:

- External analysis through PESTEL/DG and Porter’s Five Forces
  - Internal analysis through the value-based strategy framework or value creation and appropriation
  - Resources/capabilities through VRIN/VRIO
  - Value-chain analysis through primary and supporting activities
  - Competitive Strategy analysis through the consumer’s WTP, cost, and unit economics
  - Competitive Strategy Classification through cost leadership, differentiation, and focus strategies
  - Corporate Strategy through diversification
  - Organizational goals through OKRs or KPIs
  - Organizational culture through the iceberg, top-down, and bottom-up processes
- Prepared individual pitch decks analyzing the company Chipotle’s external, internal, and competitive advantage structures, presented to a group of 15 people.
  - Designed a memo with a defense and attack pitch deck for multiple formal debates, **winning both open rounds**.
  - Crafted final pitch deck with recommendations, **presenting to a group of 65 people and placing in the top 10 teams overall**.

## Extra-Curricular Activities

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**Empower & Connect Journalism, *Writer and Feature Editor***  
 Grades 11-12

*3 hours per week/20 weeks per year*

- National nonprofit organization.
- **Gathered interviews from 3 organizations**, analyzed modern news reporting from multiple sources, and evaluating contemporary topics in a range of content.
- **Wrote 8 critical analysis/review and 7 feature-length perspective pieces** on topics ranging from technology in education, historical cyclicalities, and the role of nonprofits in the modern economy.
- Organized writer interviews, gathered final journal article drafts, and **compounded articles into magazines as feature editor**.

**Interclub, Junior Varsity, & Varsity Tennis, *Tennis Player***  
 Grades 9-12

*6 hours per week/51 weeks per year*

- Club and school team.
- Played for the German Schwarz-Weiß Tennis Club of Hannover, Germany, in **interclub tennis, specifically doubles**.
- Selected for the Obra D. Tompkins high school **Junior Varsity team** in grades 10-11 and the **Varsity team** in grade 12.
- **Committed 300+ hours yearly** dedicated to tennis lessons, practices, or matches.
- **Competed in 50+ UTR, USTA, and district matches**, for both singles and doubles matches, winning first in multiple.

## Ongoing Research

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**Empower & Connect Water Filtration Research, *Market and government researcher***  
 Grades 11-12

*2 hours per week/30 weeks per year*

- National nonprofit organization.
- Crafted multiple objective surveys surrounding contemporary water quality issues, personal experiences, and government water support.
- **Distributed such surveys, garnering 54 responses from Kenya and the Dharavi Slums of Mumbai**—in partnership with COHECF-Kenya and Clinically Evolve—describing issues with water quality consistency and government assistance.
- Assisted R&D of a cheap cellulose acetate ultrafiltration membrane design intended for filtration within underprivileged communities with a lack of access to clean water.
- **Organized 15+ pieces** for Body of Knowledge pertaining to government water assistance.
- **Wrote government sections** of Literature Review, Methods, Findings, Analysis, and Conclusions based on surveys and research.
- Helped finalize research paper, which is **currently undergoing the publication process**.

## Courses & Test Scores

<b>STEM AP &amp; Advanced Courses</b>	<b>Grade (If AP level &amp; Taken)</b>
1. AP Calculus BC	5
2. AP Statistics	5
3. Pre-AP Multivariable Calculus	N/A
4. AP Physics 1	5
5. AP Physics 2	<i>In Progress</i>
6. AP Physics C: Mechanics	5
7. AP Physics C: Electricity & Magnetism	<i>In Progress</i>
8. AP English Language and Composition	5
9. AP English Literature and Composition	<i>In Progress</i>
10. AP Computer Science A	5
11. Pre-AP Computer Science Data Structures	N/A

Many more AP exams have been completed, but only the primarily STEM APs are listed here. Please reach out if you wish to learn of the full list of APs.

### **Standardized Scores**

4.71 GPA || 1560 SAT || 1490 PSAT || 35 ACT