# Abhirama Vadiraja Sonny

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#### **EDUCATION**

Allen High School | Allen, TX

Relevant Courses: AP Computer Science A, AP Physics 1, AP Biology, AP World History, AP Human Geography

#### **PROJECTS**

- Multi-Modal Few-Shot Learning Approach for Diagnosing Cantú Syndrome: designed a few-shot learning framework for diagnosing ultra-rare diseases.
- <u>Java Neural Network</u> Designed and implemented a neural network from scratch in Java, utilizing linear algebra, multithreading, and object-oriented programming for efficient computation and scalability.
- <u>Jaithon</u>: Developed a simplified programming language based on Python for educating elementary school students; successfully instructed over **20** students using a Jaithon-based curriculum.
- <u>HealthBuddy</u>: Designed and manufactured wearable necklaces with sensors to monitor vital signs; developed accompanying AI software for data analysis and alerts; researched with professionals.
- <u>Heart Data Predictions</u>: Designed and implemented **two** deep-learning algorithms to predict heart failure based on datasets of heart data; used ECG data collected in real time.

#### **WORK EXPERIENCE**

#### **Inclusive Computing Initiative**

Board Member - www.inclusivecompute.org

501(c)(3) Non-profit organization centered around teaching Computer Science to children with special needs.

- Spearheaded the growth of the organization across <u>6 states and 12 chapters</u>, increasing student participation by **40%** in underserved communities.
- Designed and implemented a dynamic difficulty adjustment algorithm, resulting in a **30%** improvement in student retention and engagement.
- Designed a search algorithm that is tailor-made for each student.

### FTC Robotics 7172 Technical Difficulties

Programmer - www.ftc7172.org

- Experimented with custom path planning and generation utilizing advanced techniques such as Bézier curves and spline interpolation; smoother and more precise autonomous navigation.
- FTC Hall of Fame 2nd, MTI finals, 1st world ranking for OPR, 9th ranked autonomous.

### VipraVrinda

UI/UX Design - vipravrinda.org

Vipravrinda is a non-profit organization that unites the Kannada Brahmin community in North America to preserve culture, foster connections, and support future generations.

- Designed and developed a responsive website, resulting in a streamlined onboarding process for **200+** members in Dallas Texas.
- Collaborated with leadership to align technological solutions with organizational goals, supporting long-term cultural preservation initiatives.

## EmpowerIndiaEdu

Social Media Marketing Intern - empowerindiaedu.org

Summer 2024

- Designed social media content to promote donation campaigns, boosting audience engagement and contributions.
- Implemented social media marketing strategies and optimized content to increase engagement and outreach.

#### LEADERSHIP EXPERIENCE

## **ASPIRE - Advancing Students' Potential in Robotics Engineering**

Co-Founder, Co-President

- Established a robust, free Robotics education infrastructure for students across three middle schools.
- Organized a district-wide summer camp for rising middle schoolers, with 32 campers and 10 HS mentors attending.
- Oversaw 15 mentors and 10 student teams (~70 middle school students) in VEX Robotics, leading to qualifications for the MS VEX V5 and VEX IQ Worlds Championships.