

SHUBHAM PANCHAL

shubham-panchal.vercel.app/ | shubhamp.academics@gmail.com | linkedin.com/in/Shubham | (612)-707-1625

EDUCATION

WAYZATA HIGH SCHOOL

2023 - CURRENT

GPA: 4.00 UW, 4.44 W

Advanced Coursework:

AP Physics C: Electricity & Magnetism, AP Microeconomics, AP Physics C: Mechanics, AP Biology, AP Computer Science A, AP Computer Science Principles, AP Calculus BC, AP Statistics

UNIVERSITY OF MINNESOTA

UMTYMP 2020 - PRESENT

CALCULUS I (1471 AND 1472),
CALCULUS II (1473 AND 2471),
CALCULUS III (2472 AND 2473)

AWARDS

3M Young Scientist Challenge State Winner (2023)

- Developed Piezoelectric Micro Power Generator
- Featured on [3M](#) and [Yahoo Finance](#)

2x FIRST Robotics Regional Quarterfinalist

Top 30% Presentation Breakthrough Junior Challenge

10x Top 5 Science Olympiad Finishes in 6 Competitions

Top 10 BPA Nationals – Fundamentals of Website Design

2x BPA 3rd Place at Nationals – Website Design Team and Web Application Team

5th Place at DECA State – International Business Plan

SKILLS

Python | C++ | Java | LaTeX | Data Analysis | Statistics | Calculus | Linear Algebra | CAD Design | Arduino and ESP32 Microcontroller | Critical Thinking | Communication | Leadership

EXPERIENCE

FIRST ROBOTICS TEAM • 2023 - PRESENT

Mechanical Sub-Team Member

Utilized CAD to design and manufacture critical robot components, including a custom hook and winch system capable of lifting the 125-pound robot and a mechanism for intaking disks from the ground and shooting them into elevated gated zones. Also lead sub-groups during various off-season projects.

SCIENCE OLYMPIAD • 2023 - PRESENT

Event Leader and Varsity Member

Designed and built various projects, including an autonomous robot using Arduino capable of navigating obstacles, an aero foil optimized for efficiency to generate maximum voltage on a wind turbine, and an oxidation reduction probe to measure salt concentration in solutions. Currently leading a group of 15+ members to deepen their understanding of designing, building, and coding autonomous robots.

INTERNSHIP AT VIGILANCE SAFETY • SEPT 2024 - PRESENT

Lead the software development team for Vigilance Safety, focusing on interfacing RFID tags with proprietary, patent-pending software. The system provides school administrators with quick access to RFID tag information and facilitates custom decision-making during emergencies. Currently working on leveraging the RFID technology to enhance school safety and reduce the risk of school shootings.

ROOTED IN STEM • PROGRAM ADMITEE

Selected for a \$40,000 scholarship to the University of Minnesota College of Science & Engineering through the program, participating in monthly seminars, hands-on STEM activities, college preparation, and networking opportunities for underrepresented students.

FREELANCE WEB DEVELOPER

Created custom websites for startup businesses utilizing HTML, CSS, JavaScript, and React JS. Ex: <https://www.westmetroinstitute.com/>.

CHEERS 2 ENGINEERING • 2023 - PRESENT

Established a website (<https://www.cheers2engineering.com/>) offering STEM projects for children, featuring engaging activities designed to teach engineering principles. Currently planning to expand the initiative by introducing in-person workshops to enhance learning opportunities.

ARQ ROBOT QUADRUPED • PERSONAL PROJECT

Designed and built a robot dog capable of standing, utilizing professional-grade CAD software, 3D printing, and an Arduino microcontroller. Currently developing inverse kinematics to enable the quadruped to walk.