

Harshatej Simhadri

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EDUCATION

Junior at Westford Academy, Westford, MA

May 2027

PUBLICATIONS

- Harshatej Simhadri, "Multi-Class Brain Tumor Detection from MRI Scans Using CNN and Transfer Learning Techniques Analysis," The Oxford Journal of Student Scholarship, May, 2026.
DOI: <https://doi.org/10.65161/rech2P4R3bbjx08xp>
- Harshatej Simhadri, "Machine Learning-Enhanced Radiomics in Neuro-Oncology: A Systematic Review of Predictive Models Beyond RANO Criteria," The American Journal of Student Research, Vol. 4, Issue 2, 2026.
DOI: <https://doi.org/10.70251/HYJR2348.42533547>
- Harshatej Simhadri, "Artificial Intelligence in Cardiovascular Electrophysiology," Global Journal of Research in Medical Sciences, Vol. 6, Issue 1, 2026.
DOI: <https://doi.org/10.5281/zenodo.18187194>
- Harshatej Simhadri et al., "Epidemiology: Analysis of Cardiovascular disease-Generation to Genetics," The Research Gate, December, 2025.
DOI: [10.13140/RG.2.2.11895.89762](https://doi.org/10.13140/RG.2.2.11895.89762)

PROJECT EXPERIENCE

HSquare Innovations, MA

Jan 2023 to Till Date

Research Intern

- Researched and filed a patent (USPTO Patent Application Number: 29/961,791) for a machine learning-based system focused on early detection of cardiovascular diseases.
- Collected, organized and managed large volumes of patient-related data each month, including health parameters such as blood pressure, cholesterol levels, and historical medical diagnoses.
- Utilized the processing unit to analyze current patient-related data to predict the likelihood of developing cardiovascular diseases.
- Delivered reliable, accurate, and timely insights to healthcare professionals through predictive analysis, supporting early detection and proactive intervention.

Harvard Medical School, MA

July 2025 to Aug 2025

Program Participant

- Completed **HMS MedScience LAB** program and gained hands-on experience in emergency room care within a high-tech simulation lab, treating STAN, a life-like interactive patient.
- Conducted experiments with real patient samples, learning how lab tests are crucial to patient care. Collaborated with fellow researchers in the Harvard Medical School lab, performing DNA Extraction, PCR, Gel Electrophoresis, and ELISA—skills essential for clinical research roles.

- Developed critical thinking, problem-solving, communication, and teamwork abilities, all of which are foundational for future academic and professional success.
- Engaged with healthcare and research professionals, explored careers in biomedical science, and found inspiration from Harvard Resident Students during MED chats.

Harvard Medical School, MA

July 2024 to Aug 2024

Program Participant

- Completed **HMS MedScience Clinical** program and gained hands-on experience in emergency room care within a high-tech simulation lab, treating STAN, a life-like interactive patient.
- Engaged with healthcare and research profession, explored careers in biomedical science, and found inspiration from Harvard Resident Students during MED chats.
- Collaborated in life-like patient simulations, developing clinical reasoning, leadership, and teamwork skills while performing patient assessments, reviewing and interpreting diagnostic tests.
- Conducted analysis on the human body, learning how physiology is crucial to patient care. Collaborated with fellow researchers in the Harvard Medical School lab, performing CPR, Stop the Bleed, and Intubation—skills essential for EMT roles.

COMMUNITY INVOLVEMENT

Schoolhouse

June 2025 to Till Date

Certified SAT Tutor

- Deliver personalized SAT tutoring in Schoolhouse (www.schoolhouse.world) for both Math and English sections to individual students and small groups, in remote settings.
- Design and implement customized lesson plans based on each student's strengths, areas for improvement, and learning style.
- Focus on targeted practice, test-taking strategies, and confidence-building to enhance student performance.
- Successfully improved students' SAT scores by 250+ points through strategic instruction and continuous progress tracking.

SmartQuad Corporation, MA

Dec 2019 to Till Date

Founder and Mentor

- Founded and led SmartQuad (www.smartquad.org), a nonprofit organization dedicated to delivering high-quality education in Mathematics, Computer Technology, Public Speaking, Science, and various other subjects to children worldwide.
- Received "The President's Volunteer Service Award (Gold)" for the years 2023 and 2024
- Led establishing and growing SmartQuad teams and chapters in various countries, driving global collaboration and creating a meaningful impact.
- Dedicated over 500 hours to volunteering, contributing to the growth and development of educational opportunities for young learners globally.
- Trained and contributed to the creation of research articles through SmartQuad (<https://www.smartquad.org/category/harshatej-simhadri/>)

St. Joseph Hospital, NH**Aug 2024 to Till Date****Junior Volunteer**

- Currently working as a junior volunteer at St. Joseph's Hospital in the ICU division, where I serve as liaison between the ICU staff and the patient's family
- I provide information as requested by family members and visitors about the ICU unit in the hospital
- I notify the patient relations or the ICU staff of any concerns the patient's family may have to ensure the best possible customer service is provided
- Alert the on-call staff when family members need support

U.S. Department of Veterans Affairs, MA**June 2024 to Aug 2025****Junior Volunteer**

- Volunteered at Bedford Veterans Hospital during the summers of my freshman, sophomore, and junior years.
- Received an Outstanding Volunteering Award for contributing over 100 hours from the U.S. Department of Veterans Affairs.
- Assisted in the preparation of the research paper, "Impact of Social Relationships on Psychosocial Function in Veterans."
- Helped nurses and other healthcare professionals with non-medical tasks, such as delivering meals, transporting patients, or assisting with mobility.
- Participated in the MIRECC (Mental Illness Research, Education, and Clinical Center) Research Club, where I engaged with and interviewed veterans experiencing mental health challenges.
- Played a role in maintaining operational efficiency by organizing patient records, ensuring patients understood pre-procedure instructions, and streamlining department workflows.

St. David's HealthCare, TX**Dec 2025 to Jan 2026****Physician Shadowing Student**

- Gained exposure on electrophysiology studies from Dr. Gallinghouse, a Cardiac Electrophysiologist, at St. David's Medical Center over the course of 50 hours.
- Observed catheter-based electrophysiology studies, including intracardiac signal measurement and cardiac electrical mapping
- Gained exposure to the cardiac conduction system, including the sinus node, AV node, atria, and ventricles, and their roles in rhythm regulation
- Observed how electrophysiology findings guide clinical decision-making and procedural strategy
- Learned about risks and complications associated with arrhythmias, including stroke risk in atrial fibrillation
- Observed multidisciplinary teamwork among physicians, nurses, and technologists in a procedural hospital environment
- Strengthened understanding of how anatomy, physiology, and technology integrate in modern cardiology care

Beth Israel Lahey Health, MA**June 2024 to Aug 2025****Junior Volunteer**

- Gained over 100 hours of experience across endoscopy, ambulatory, ultrasound, central supply departments, and the mammogram department.

- Assisted with patient escorting from the main lobby to labs, ensuring a smooth and supportive experience.
- Assisted patients during mammogram procedures by helping with patient preparation and ensuring comfort and privacy, escorting patients to and from exam rooms, maintaining cleanliness in the department, and supporting staff with scheduling and administrative tasks.
- In the Endoscopy and Ambulatory Surgery Department, I made stretchers, filled up storage carts of medical equipment, place towels in the warmer, etc.
- I also navigated patients to different departments in the facility, as well as answering any questions the patients had regarding parking hours/payment, cafe hours, and shuttle times, etc.

American Red Cross

March 2024 to Till Date

Community Youth Volunteer

- Assist with blood drive programs in coordination with supervisors.
- Assist with new volunteer recruitment and training.
- Participate in community outreach and public relations initiatives.

TRAINING & CERTIFICATIONS

- **Inspirit AI Scholars Program** — Completed intensive AI/ML training and a mentored research project under the guidance of **Stanford** and **MIT** alumni

Certification Name	Organization
Adult and Pediatric First Aid/CPR/AED	American Red Cross
Data Science Foundations - Level 2	IBM
Data Science Foundations - Level 1	IBM
Data Science Tools and Methodologies	IBM

AWARDS & ACCOMPLISHMENTS

- Secured **1st place** in the **state-level HOSA competition** in the EMT category and attended **HOSA International Leadership Conference** in **2025** and **2026**.
- Secured **3rd place** in the **state-level DECA competition** and attended the **SDC & ICDC competitions** at Atlanta in **2026**.
- Selected member of the **National Honor Society** and **National Spanish Honor Society**; participant in **Math Club** and **HOSA** at **Westford Academy**
- Received the **Presidential Volunteer Service Gold Award** for outstanding community service in both **2023** and **2024**.
- Outstanding Academic Excellence (Gold Level) Award, **The President's Education Awards Program**, Lloyd G. Blanchard Middle School, Westford, MA.

ACTIVITIES & STUDENT CLUBS

- Member of the **National Honor Society** and **National Spanish Honor Society**.
- Member of **DECA Club** at **Westford Academy**.
- Member of **Math Team Club** at **Westford Academy**, participates in Math Competitions as a team and individual and host the math Competitions at WA.
- Member of **HOSA Club** at **Westford Academy**.