REVA BHATT

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SUMMARY

Innovation-focused problem solver passionate about translating ideas into practical solutions. I learn by doing, value real-world impact over theory, and bring genuine curiosity to every challenge. Whether it's segmenting CT scans or building tools for communities, I ask, "Does this actually make sense?" and make it happen.

EDUCATION + SKILLS

Great Valley High School, Malvern, PA

Class of 2026

Technical Skills

Java, C++, Python, Fiji, 3D Slicer, Excel, PowerPoint, Word

Soft Skills

Communication, Problem Solving, Leadership

Relevant Coursework AP CS Applications, AP CS Principles, AP Calculus BC, AP Physics C,

AP Physics E&M, Multivariable Calculus, Linear Algebra, AP Statistics,

AP Economics, AP Biology, AP Government, AP Language, AP Literature

RESEARCH

Student Researcher

July 2025 - Present

Carnegie Mellon University - Dr. Kathleen Carley

Pittsburgh, PA

- Create simulations of attack descriptions from MITRE ATT&CK to enhance cybersecurity measures
- Programmed in C# using Unity game engine

NASA Gene Lab Intern

June 2025 - August 2025

- Completing training program in space life sciences, bioinformatics, and computational biology
- Analyzing complex biological data, including genetic codes, in spaceflight contexts

Student Researcher

November 2024 - Present

Villanova University - Dr. Chandrasekhar Nataraj

Villanova, PA

- Fault diagnosis of endodontic files during root canal treatment using MATLAB and Python
- Rhythm and trend analysis of ART and SPO2 five-second epoch data using ML and DL techniques

Student Researcher

March 2023 - August 2025

University of Pennsylvania - Dr. Chamith Rajapakse

Philadelphia, PA

- Segment CT scans to develop AI tool for determining bone density in specific anatomical regions
- Expanded project scope from femur segmentation to dental applications

EXPERIENCE

Student Developer

April 2025 - Present

Nth Solutions - Advancing Innovation From Concept to Revenue

Coatesville, PA

- Collaborate with professional technical staff on product development for company and clients
- Contribute to software development, firmware, electronic hardware design, mechanical design, prototyping, and product testing

Dental Shadowing

June 2025 - August 2025

Dr. Stone Dentistry - Dr. Jonathan Stone

Wayne, PA

- Observe clinical procedures, patient care, and practice management in private dental office
- Gained insight into diagnostic techniques, restorative treatments, and patient communication

Summer Intern

May 2024 - August 2024

Philadelphia Fashion Incubator - Ms. Elissa Bloom

Philadelphia, PA

- Researched entrepreneurs from previous incubator sessions to measure economic impact and success rates
- Developed business case documentation to support funding applications

Camp Rising Sun - The Louis August Jonas Foundation

- Selected for international cohort (30 countries) exploring leadership, identity, justice, and social action
- Participated in intensive community-building and ethical leadership development

Co-Founder

September 2016 - Present Malvern, PA

Arts.Care (Non-profit)

• Founded organization inspiring youth community involvement through art

- Led mask initiative: 1000+ masks created, 300+ donated to U.S. Navy, \$2000+ raised for Shriners Hospital
- Lead organizer, Arts.Care mask initiative (arts.care/masksforcovid)
- Overall impact: 3500+ cards, 50+ events, 50 members, \$17,000 raised

Girl Scouts Ambassador

September 2016 - Present

Girl Scouts of America

Malvern, PA

- Led community service initiatives like organizing Petals Please projects, food bank drives, and volunteer events at hospitals and nursing homes.
- Coordinated younger troop members during activities and ensured smooth execution of outreach events.

PROJECTS

Elephancy – VR visualization tool for Aphantasia patients; AI-generated multi-perspective scenes rendered in immersive VR. Tech stack: Flutter, A-Frame, Android, Google Cloud, Stable Diffusion.

- Competed at PennApps 2024.
- Built full pipeline from text prompt to AI-generated VR scene.
- Designed multi-view visuals to support individuals who cannot form mental imagery.

Finding Hidden Faults in Endodontic Tools – Python/MATLAB system detecting microfractures using accelerometer and dynamometer data.

- Applied FFT and Wavelet analysis to extract vibration and force features.
- Trained ML models to classify early tool fatigue with strong accuracy.
- Developed proof-of-concept for real-time fault detection in dental handpieces.

3D Anatomical Model from CT Scans – Integrated TotalSegmentator into 3D Slicer to produce AR-ready anatomical models.

- Automated multi-structure segmentation using deep-learning tools.
- Enabled high-resolution 3D visualization for research and AR/VR use.
- Improved workflow efficiency by replacing manual segmentation.

High-Degree Polynomial Root Finder – Java implementation of the Newton-Raphson method for computing roots.

- 1st place, Delaware Valley Science Fair; Air Products Young Innovators Award.
- 1st place Programming Award, 2023 Regional Media and Design Competition.
- Built iterative numerical solver for high-degree polynomials.

Opportunistic Assessment of Bone Density Using Dental CBCT – AI-driven analysis of cervical vertebrae from dental CBCT scans.

- Built automated segmentation pipeline with 3D Slicer + TotalSegmentator.
- Extracted voxel-based density features for bone-quality estimation.
- Designed as a low-cost screening method for early osteoporosis risk.