Liyang (Victor) Han

Curious Researcher • Human-Centered Builder • Servant-Leader

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EDUCATION

➢ **Brookfield Central High School, WI (Public high school)**   **9/2022 - Present**

➢ **GPA: 4.00/4.00** (Unweighted, Cumulative), **5.0/4.0** (weighted, Cumulative)

➢ **SAT (2 sittings): 1550** (780 R&W, 770 M); Superstore: **1560**.

➢ **AP (10):** Calculus BC (5), Statistics (5), CS A (5), Bio (5), Human Geo (5), ES (5), Chinese Language & Culture (5), Physics C - Electricity & Magnetism (4**),** Physics C Mechanics (4), Physics I (4)

➢ **University courses**: Data Structure, Milwaukee School of Engineering University;

Linear Algebra, University of Wisconsin-Milwaukee

➢ **Programs/Training:** MIT BWSI (Medlytics track): Python Core, Version Control, Git & GitHub

HONORS & AWARDS

1) **Regeneron ISEF: Translational Medical Science, 2nd Place Award** — ParkinAid: A Multimodal AI-Powered diagnosis & robot-assisted rehab for Parkinson's Patients (Gr11, International)

2) **U.S. Provisional Patent 63/790,055** — ParkinAid: A Multimodal System for Parkinson's Diagnosis through Motor and Speech Disorder Analysis (Gr11, National)

3) **Paper** "*ParkinAid: A Multimodal System for Parkinson's Diagnosis through Motor and Speech Disorder Analysis using Machine Learning and Computer Vision"* will be published in the International Conference Proceedings Series (ICPS) by ACM, which will be archived in the **ACM Digital Library**, and indexed by *Ei Compendex, Scopus, etc.*

4) **Regeneron ISEF Finalist**: An Auxiliary rehab device for Parkinson's with tremor/stiffness(Gr10, International)

5) **USACO Gold Division** (Gr11, International)

6) FIRST Tech Challenge **(FTC) World Championship** as software lead: Inspire Award 2nd Place (Gr10); 4th Alliance Captain (Gr10); 2nd Alliance Captain (Gr11)

7) **Congressional App Challenge**, WI-5 — **1ˢᵗ Place**— ParkinAid AI Diagnosis App (Gr11, National)

8) National Junior Science & Humanities Symposium (**JSHS**) — Finalist (Gr10, National)

9) **President's Volunteer Gold Service Award:** Teaching Python for local community (Gr11, National)

10) **Diamond Challenge for High School Entrepreneurs** — **Semifinalist** (Gr11, National)

11) **2026 National Merit Scholarship Program — Semifinalist** (Gr12) (Finalist application submitted)

12) **John Locke Institute Global Essay Prize**: Theology "Why Pray", *Shortlisted* (Top 18.65%), 2025

RESEARCH & PROJECTS

1) **ParkinAid — Multimodal AI Diagnosis & Robot-Assisted Rehabilitation system for Parkinson's (06/2024 – Present I Independent Research)**

- Built computer-vision + voice analysis AI models to detect Parkinson's-related motor/speech markers.

- Iteratively update the Rehab device design.

- Deployed a user-facing app and website for AI-Powered diagnosis through Motor and Speech Disorder Analysis of Parkinson's

- Presented on The 13ᵗʰ International Conference on Computer and Communications management (ICCCM 2025) on **July 13, 2025**, **a paper** "*ParkinAid: A Multimodal System for Parkinson's Diagnosis through Motor and Speech Disorder Analysis using Machine Learning and Computer Vision" will be published in*

the *International Conference Proceedings Series (ICPS) by ACM*, which will be archived in the **ACM Digital Library**, and indexed by **Ei Compendex, Scopus**, etc.

2) **Auxiliary Rehabilitation Device for Finger Tremor/ Stiffness of Parkinson's Patients**
   01/2023 – 05/2024 | Independent Researcher
   Designed and tested a low-cost and portable rehabilitation device for PD patients with hand tremor/stiffness.

3) **MIT Beaver Works Summer Institute (BWSI) — Medlytics**
   07/2025 – 08/2025 | Research Student, **MIT Lincoln Laboratory**
   Applied ML, signal processing, and Python to real-world datasets; presented findings to MIT scientists.

4) **SoftCom Lab, California State Polytechnic University   06/2024 – 08/2024 | Summer Intern**
   SignLang:Contributed a real-time dynamic gesture-recognition tool to improve sign-language interpretation using computer vision.

LEADERSHIP & COMMUNITY ACTIVITIES

1) **ParkinAid Nonprofit Organization—Founder and President   1/2024~Present**
   - Deliver in-person education to **~2,000** community members on Parkinson's signs, management, and home-based rehab; programs brought to Milwaukee senior centers, Aurora Health Care sites, city farmers' markets, Independence Day events, and the Wisconsin Dragon Boat Festival.
   - To date**, served 1,100 unique users from 15 countries with 2,500 total sessions** on ParkinAid's AI-assisted Parkinson's diagnosis app (web + mobile)
   - Completed **"Hmong Community Health Access & Parkinson's Early Screening in Wisconsin: A Mixed-Methods Co-Design Study."**
   - Organized violin performances and community runs, **raising $5,600** to support education and access.
   - Train **200** students on Parkinson's basics on campus, amplifying awareness within their families

2) **FTC Robotics Team 16460 — Captain (Gr12); Software Lead (Gr10–12)   09/2022 – Present**
   - Led controls/autonomous/CV development; qualified for **FTC World Championship twice**: Inspire Award 2nd Place (Gr10); 4th Alliance Captain (Gr10); 2nd Alliance Captain (Gr11)
   - Mentored rookie teams and directed strategy, scouting, and code reviews.

3) **AI Club — Cofounder & Editor-in-Chief   01/2024 – Present**
   - Editor-in-Chief, Biweekly AI Newsletter,
     Led 30-issue biweekly AI newsletter for 150+ readers on AI ethics, trends, and tools.
   - Recruited **20+** students for science-fair prep; mentees placed **WI CS 3rd** and **ISEF 2025 Robotics 2nd**.

4) **French Honor Society & Independent Art-History Research   09/2022 – Present**
   - Studied 19th–20th-century Impressionism/Post-Impressionism (Manet, Monet, Van Gogh); produced bilingual talks linking language, history, and visual analysis.

SELECTED ATHLETICS & ARTS

1) **Running:** 100 miles/month, multiple half and full marathons.   **6/2023-present**
2) **Violin:** Concertmaster (Gr11); Chamber Orchestra (Gr9–10); community performances.   **2014-present**
3) **Athletics:** Soccer & Track (JV).   **8/2022-present**
4) **Pool/Billiards:** League competitor; ~Top 5,000 FargoRate.   **9/2022-present**
5) **Drawing & Drone Photography:** Personal portfolio and event coverage.   **9/2022-present**

OTHER SKILLS

Programming: Python, Java; C++, MATLAB; HTML/CSS
ML/DS: NumPy, Pandas, Matplotlib, scikit-learn, TensorFlow, PyTorch
Tools: Git/GitHub; Swift/SwiftUI (intermediate)