

Albert Hu

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EDUCATION

University of Michigan, College of Engineering August 2025 – May 2029
Bachelor of Science in Engineering (BSE) in Computer Science, AI Track GPA: 3.63/4.00 Ann Arbor, MI

- **Relevant Coursework:** Data Structures & Algorithms, Computer Organization, Foundations of Computer Science, Discrete Mathematics, Applied Linear Algebra, Introduction to Machine Learning, Introduction to AI

PROJECTS

Naive Bayes Text Classifier | C++, Individual Project Mar. 2026

- Built a classifier that predicts the topic of course forum posts from a labeled training corpus, scoring a bag-of-words model with `std::map` and `std::set` for vocabulary and per-label word counts.
- Accumulated probabilities in log space to prevent underflow; measured accuracy on a held-out test set.
- Implemented a debug mode reporting vocabulary size, per-label priors, and word log-likelihoods to verify training.

Content-Aware Image Resizer | C++, Individual Project Feb. 2026

- Implemented seam carving to resize images without distorting their subject, computing a per-pixel energy matrix and removing minimum-cost seams via dynamic programming.
- Managed image data through manual pointer arithmetic over C-style structs; wrote a unit-test suite covering matrix indexing, seam recovery, and boundary conditions.
- Reduced height by rotating the image and reusing the vertical-seam routine, utilizing one implementation for both axes.

Underwater ROV | Team of 5, University of Michigan Jan. 2026 – Apr. 2026

- Designed and built a remotely operated underwater vehicle with three degrees of freedom — surge, heave, and yaw — integrating mechanical, electrical, and software subsystems.
- Conducted hydrodynamic testing in the Marine Hydrodynamics Laboratory towing tank to evaluate stability and maneuverability, and evaluated thruster and battery configurations for a scaled-up ROV.

Campus Transit Reliability Analysis | Team of 3, University of Michigan June 2026

- Analyzed route overlap across U-M's bus network with a link-and-departure redundancy metric, identifying duplicated service on the Fuller–Plymouth corridor and drafting revised Bursley–Baits and Northwood route maps.
- Proposed demand-responsive scheduling for exam periods and headway-based holding at CCTC to reduce bus bunching; communicated findings through a technical report and presentation.

LEADERSHIP, ACTIVITIES & SERVICE

Tennis Game Analytics & Video Editing | Individual Project July 2026

- Recorded and edited tennis match videos into clips, analyzing footage to identify patterns and weaknesses.

Huron High School Varsity Tennis | Varsity Team Captain & Web Developer 2023 – 2025

- Designed and developed an HTML website for team schedules, rosters, and match results.
- Mentored younger players and helped lead the team to a Top-5 finish in the state of Michigan.

Self-Taught Chess Player | Independent Study and Competition 2021 – 2026

- Reached peak Lichess ratings of 2,388 Bullet, 2,262 Rapid, 2,221 Blitz via self-study and Stockfish analysis.

Huron Valley Tennis Club | Summer Camp Tennis Coach Jun. 2024 - Aug. 2024

- Coached ~30 junior players ages 7–13 in tennis technique, match play, and sportsmanship.

Glacier Hills Senior Living Community | Piano Concert Organizer & Performer 2021 – 2025

- Organized and performed piano concerts for seniors, recruiting ~10 pianists and coordinating concert programs.

AWARDS & HONORS

- **MHSAA & USTA Tennis Regional Champion;** All-Conference; All-State Honorable Mention 2023 – 2025
- **Multiple International Piano Competition Awards;** Five-time Carnegie Hall Performer 2016 – 2025

TECHNICAL SKILLS

Languages: C++, Python, Java, MATLAB, HTML
Developer Tools: Git/GitHub, Adobe Premiere Pro
Spoken Languages: English (native), Mandarin Chinese (fluent), Spanish (intermediate)