# Albert Chen

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## EDUCATION

**University of Michigan College of Engineering** — Ann Arbor, MI
*Prospective B.S.E. in Computer Engineering - GPA: 4.00* — *Expected Graduation: May 2028*

- Relevant Coursework: Introduction to Logic Design, Discrete Math, Introduction to Differential Equations

## EXPERIENCE

**Undergraduate Research Assistant** — Sep. 2024 – Present
*MAVRIC Lab @ University of Michigan* — *Ann Arbor, MI*

- Developed a Reinforcement Learning algorithm with vSLAM and LiDAR in order to estimate human engagement
- Implemented a ROS-based simulation in NVIDIA Isaac Sim to verify the engagement algorithm
- Contributed to weekly lab meetings by presenting progress reports and soliciting feedback from peers and advisors

**P-CEP STEM Academy, Group Leader** — Sep. 2020 – May 2024
*Plymouth High School* — *Canton, MI*

- Researched, designed, and built a Arduino-based robot with OpenCV and ROS to automatically plow snow
- Designed an assembly line with CNC Machines and 3D Printers to automate various manufacturing processes
- Applied machine learning frameworks to build data classifiers and GAN network simulations

**P-CEP CyberPatriot Team, Captain** — Sep. 2021 – May 2024
*Plymouth High School* — *Canton, MI*

- Remedied critical vulnerabilities in Linux machines, including weak permissions and misconfigured services.
- Led the team to the semifinals at the Platinum Tier, achieving a rank higher than 30% out of 5,183 teams
- Developed a Bash script to automate repetitive tasks, including software updates and user hardening

**Math Competitor** — Sep. 2020 – May 2024
*Plymouth High School* — *Canton, MI*

- Qualified for AIME in multiple years, scoring in the top 5% of all AMC 12 test takers
- Oversaw 30 students in the East Middle School math team through group challenges and test reviews, explaining difficult concepts through lecture-style lessons

**Lifeguard** — Jun. 2023 – Aug. 2024
*Canton Township* — *Canton, MI*

- Jeff Ellis and Associates certified in CPR and First Aid
- Trained new employees by teaching and practicing job routines with them
- Collaborated with co-workers and communicated with concise instructions to diffuse high stress situations

## PROJECTS

**Hand Gesture Car Racing** | *Mediapipe, Express, PixiJS* — Oct. 2024
*Hack Dearborn 3 (Hackathon)* — *Dearborn, MI*

- Launched a 2D racing simulator webapp with PixiJS and Express.js to create smooth and fluid gameplay
- Utilized Google's Mediapipe models to grant users the ability to drive with only their hands and a camera

**Automatic Snow Plow** | *ROS, Computer Vision, Arduino* — May 2024
*P-CEP STEM Academy (School)* — *Canton, MI*

- Developed an automatic snowplow model capable of navigating a specified area through an external camera
- Achieved ROS communication between the Arduino and Raspberry Pi, allowing the robot to path-plan effectively

## TECHNICAL SKILLS

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|---|---|
| **Languages**: | C/C++, Python, Verilog, Java, SQL, JavaScript, HTML/CSS, Bash |
| **Tools**: | ROS, FPGAs, AprilTags, Arduino, Raspberry Pi, CNC machines, 3D printing |
| **Developer Tools**: | ModelSim, Quartus, Git, Linux, VS Code, MATLAB |
| **Libraries**: | OpenCV, Tensorflow, Keras, PyTorch, pandas, NumPy, Matplotlib |