

# Lawrence Chang

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Project Portfolio: [lchangbuilds.com](#)

## EDUCATION

### Northwestern University

2023 (anticipated)

B.S. Mechanical Engineering and Minor Computer Science

- **GPA: 3.98/4.00**, High Honors - 2/3 quarters, Honors - 3/3 quarters
- Coursework: User Design, Statics, LinAlg, DiffEq, Multi Var Calc, Dynamics, Circuits, Fluid Mech

## EXPERIENCE

### Avid CNC

North Bend, WA

Product Design Intern

June 2021 - August 2021

- Designed and prototyped a magnetic laser mount configurable to 16 positions using a single mount
- Responsible for testing and documentation of laser system in preparation for product launch
- Worked with partner companies to test and debug laser control software for CNC machines

### Northwestern Formula Racing

Evanston, IL

Suspension and Electric Vehicle Team Member

Sept 2020 - Present

- Developing an electric formula SAE car battery enclosure that provides adequate cooling and protection
- Developing formula SAE car wheel hubs to withstand dynamic loads from driving
- Designed an anti-roll bar system (ARB) optimized with 15% weight savings while improving manufacturability

### Segal Design Institute

Evanston, IL

Senior Prototype Shop Trainer

March 2021 - Present

- Developed curriculum for and taught operation of machine tools and hand tools on a weekly basis
- Assisted design teams with prototype planning and fabrication
- Responsible for maintaining safety protocols and performing machine and shop maintenance

### Design Thinking Communication Course (DTC), Northwestern

Evanston, IL

DTC Team Project Manager

March 2021 - June 2021

- Led a 4-student design team to create a modular LED paneling system for a consulting firm
- Regularly conducted user and client interviews for mock up testing and research
- Wrote technical reports and a final presentation to document our research, prototypes, and design justification

### Paly Robotics

Palo Alto, CA

Team Captain

Aug 2016 - June 2020

- [2020 Robot Documentation](#)
- Project managed technical operations of the robot and led the team to our first competition win in 14 years
- Coordinated logistics with mentors, parent volunteers, and school administration for a 70-member team
- Led and organized a robotics summer camp for over 40 students across 2 weeks
- Created teaching curriculum which increased the number of proficient machinists on the team 5-fold

## PROJECTS

See full list of projects at [lchangbuilds.com](#)

### Semi-Autonomous Longboard

2021 - Present

- Developing an electric longboard with a semi-auto person tracking mode
- Designed a [compact robotic drive module](#) to withstand the dynamic loads during riding

### Electric Microbike

2019

- Welded a [custom tube frame](#) with full suspension
- Incorporated tail and headlights, a custom upholstered seat, and a 3D printed electronics enclosure

## SKILLS

**Fabrication:** CNC, Mill, Lathe, Plasma, Laser, 3D Printer, Welding, Prototype Electronics, Sheet Metal Fabrication

**Design Engineering:** Rapid Prototyping, SolidWorks, NX CAM, DFM, DFA, Fusion360, ADAMS, GD&T

**Software:** Matlab, Python, Excel, C, C++, Arduino, LaTeX, HTML

**Other:** Technical Report Writing/Documentation, Fluent in Mandarin, BoM, Project Management, Leadership