

# Taewon Yoon

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## EDUCATION

### Northwestern University

*Bachelor of Science in Manufacturing and Design Engineering, Minor in Art, Theory, and Practice*

Evanston, IL

*Anticipated June 2026*

- GPA: 3.82/4.00
- Tau Beta Pi (Engineering Honor Society), DFA (Design for America) member

## WORK EXPERIENCE

### CAD Designer

Remote

*Powerhouse Competition Air*

*October 2024 – December 2024*

- Used Solidworks to reduce the width of an electro-mechanical air fill station from 8" to 5.25" to allow customers to efficiently arrange multiple machines side by side and to reduce product weight and production costs for the company
- Designed air flow chambers to enable front-facing air refills instead of side-facing, improving user convenience and operational functionality while also considering manufacturing feasibility

### Product Design Intern

Evanston, IL

*Northwestern University Segal Design Institute*

*June 2024 – October 2024*

- Led a group of seven to design and manufacture an interactive wooden puppet theater for children of ages 5-13 at the Cook County Department of Corrections Visitor Center to be used by an average of 200 visitors weekly
- Originated a four-week manufacturing plan and delegated tasks to team members to streamline the production of six trapezoidal modules with unique attractions and locking mechanisms that interlock with each other in multiple orientations
- Presented a full CAD mockup generated using Solidworks and a rendering created using Keyshot to gain feedback and approval of design concept and elements from stakeholders before constructing final product
- Conducted on-site visits, user testing, and field interviews with the Facility Director to understand design specifications including extreme durability, portability, and adherence with facility safety requirements such as rounded edges and no metal parts

## PROJECTS

### Bodyworks Design

Evanston, IL

*Northwestern Formula Racing Aerodynamics Team*

*June 2024 – Present*

- 3D-modeled the bodywork using Solidworks and ran CFD tests to validate and optimize airflow efficiency using Ansys
- Facilitated cross-functional collaboration with the chassis and suspension teams to ensure seamless integration of the bodywork design with mechanical components, while maintaining full compliance with Formula SAE regulations
- Developed and executed a new method for creating molds used in carbon fiber curing using Fusion 360 for CAM operations and the CNC router to enhance productivity, reducing manufacturing time by 3 months compared to the previous year

### Rear Hubs Design

Evanston, IL

*Northwestern Formula Racing Suspension Team*

*June 2023 – June 2024*

- Redesigned the rear hub using Solidworks, achieving a 14% weight reduction while maintaining structural integrity
- Conducted finite element analysis (FEA) for four driving situations to verify the mechanical reliability of the part
- Created a geometric dimensioning and tolerancing (GD&T) document to communicate with an outsourced manufacturing partner
- Designed and manufactured two rear hub caps using Fusion 360 to generate G-code for CAM to operate on a CNC mill

### The 120, a color-changing recliner

Evanston, IL

*Furniture Design*

*January 2024 – March 2024*

- Conceptualized a low-profile reclining chair, implementing an innovative mechanism to enable double-sided cushions to be pulled out and inserted to change color and simultaneously adjust the chair's angle in 5° increments between 100–140°
- Designed and constructed five full-scale prototypes using Solidworks and a CNC router to analyze user feedback and test different materials including 3D printed PLA, aluminum, and plywood, improving chair ergonomics through every iteration
- Showcased design evolution and technical insights by publishing a 182-page design process book created using Adobe Illustrator, Photoshop, and InDesign

## LEADERSHIP EXPERIENCE

### Publicity Chair

Evanston, IL

*Korean American Student Association*

*June 2023 – Present*

- Led a team of five people in the creation of visual content to promote Korean culture at Northwestern University
- Planned and managed a schedule for ideation, production, and promotion of marketing materials for club events using Slack
- Redesigned club logo using typography to represent the club's cultural identity in both English and Korean using Adobe Illustrator
- Designed and introduced mascots for the first time in club history to encourage member engagement using Adobe Illustrator, resulting in an 18% year-on-year increase in new member recruitment

## TECHNICAL SKILLS

**Software:** Adobe Illustrator, Photoshop, InDesign, Microsoft Office, Solidworks, Fusion360, Onshape, NX, Figma, Blender, Keyshot

**Machining:** Proficient in CNC router/mill, laser cutter, 3D printer, injection molding, lathe, bandsaw, tablesaw, mitersaw, soldering

**Language:** Fluent in English and Korean, professional working proficiency in Japanese