

# Reiten Cheng

Industrial Designer  
Pasadena, CA  
Reiten966@gmail.com  
717-341-8625  
[www.reiten.design](http://www.reiten.design)

## Recognition

### Awards

IDEA Awards - Best In Show - 2023  
IDEA Awards - Jury Chair's Choice - 2023  
IDEA Awards - Gold - 2023  
Spark Awards - AllSpark Special Honor - 2022  
Spark Awards - Platinum - 2022  
Spark Awards - Platinum - 2020  
The James Dyson Award - International Winner - \$35,000 - 2022  
Hackaday Award - 3rd Place - \$15,000 - 2022  
Core77 Award - Winner - 2023  
RoPlastic Prize - Finalist  
Dezeen Awards - Longlisted

### Publication

IDS INNOVATION - Yearbook of Design Excellence - Fall 2023 - Polyformer Featured On The Front Cover  
Dezeen - Polyformer is an open-source machine that recycles plastic bottles into 3D printing filament - 2022  
Hackaday - Recycling plastic into filament - 2022  
Designboom - the 'polyformer' by reiten cheng turns plastic bottles into filaments - 2022  
Stir - From plastic waste to fodder for 3D printing, Polyformer bridges the gap - 2022

### Exhibition

Global Grad Show Exhibition - Dubai  
Innovation For Living Exhibition by Isola Design - Milan  
London Design Biennale Exhibition - London

## Interests

Fine Woodworking / 5-Minute-Benchy 3D Printing / Audiophiling / Building Automata

## Work Experience

### Polyformer / Inventor

April 2022 - April 2023 (12 months), Pasadena, CA

- Developed an open-source filament maker called Polyformer, focusing on optimal design through engineering and testing for user experience and aesthetics.
- Led a global community effort of **5000 individuals**, resulting in over **450 Polyformer machines** being operational in **30+ countries** for recycling plastic bottles.
- Engineered a **50mm** cycloidal gearbox with a **30:1** reduction ratio and **70%** efficiency, using only 3D-printed parts and M3 fasteners, capable of producing a torque of **300Ncm**, designed to be concealed within the spool system.
- Created a low footprint architecture that allows accessible user interactions and modular component updatibility.
- Innovated a thermal solution for the gearbox using a 3D-printed fan, achieving a **20°C** temperature reduction by directing heat away through a parting line without visible vent holes.

### Voltpost / Design Engineer

June 2023 - Sep 2023 (3 months), San Francisco, CA

- Developed outstanding **patent-pending** designs, focusing on injection molding and aluminum extrusion process, saved the company from investing in **\$120K** large size tooling.
- Adapted industrial designs for quality and cost-efficiency, ensuring alignment with design intent.
- Produced captivating renderings and animations that significantly contributed to a successful investor pitch, ultimately securing a **\$4 million** funding.

### iRobot / Industrial Designer

June 2021 - Feb 2022 (9 months), Oct 2022 - April 2023 (6 months), Boston, MA

- Advanced a new product category at iRobot by leveraging mechanical engineering skills to create innovative designs that improve aesthetics and functionality.
- Utilized 3D printing, CNC, and shop fabrication for rapid prototyping, facilitating quick iteration of designs with integrated sensors and actuators to obtain early user feedback, shortening the product development by **6 months**.
- Employed systematic approaches to refine product designs, working closely with engineers and designers to evaluate concepts from both design and engineering perspectives.
- Led a project from **conception to final production tooling**.
- Developed seamless closure mechanisms to maintain uniform surfaces on products.
- Created interactive prototypes, devising mechanisms that integrate mechanical functions with user interactions for a seamless experience.
- Shipped iRobot Roomba Combo j9+ and completed an NDA Project.**

### Hewlett-Packard / Industrial Design Intern

Sep 2020 - Dec 2020 (3 months), Palo Alto, CA

- Originated creative concepts and varied designs around VR product category, focused on seamless user interaction, aligned with Omen's aesthetic, to maintain a cohesive product line.

### CNI / Optical Engineering Intern

June 2015 - Sep 2015 (3 months), Chang Chun, China

- Developed a digital system to record and organize data for researchers.

## Education

### PennState University / Mechanical Engineering

Sep 2016 - May 2018, York, PA - Transferred

### ArtCenter College of Design / Industrial Design

Sep 2018 - May 2022, Pasadena, CA

## Skills

Solidworks / Siemens NX / Rhinoceros 3D / Keyshot Renderings / Animation / Sketching / Storyboards / Adobe Photoshop / Illustrator / Microsoft Office 360 / 3D Printing / MasterCam / Fabrication / Autodesk AutoCAD / Virtual Reality / Multidisciplinary Collaboration / User Research