Kathy Cheng

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Summary

Design researcher with 5+ years of experience specializing in computer-aided design (CAD) collaboration, engineering workflows, and AI-augmented design systems. Led mixed-method research programs to uncover coordination breakdowns, inform product strategy, and shape technical B2B software tools. Skilled at translating complex systems research into actionable product decisions.

Experience

Human-Computer Interaction Researcher **09/2021 – Present**
Ready Lab | University of Toronto *Toronto, ON*

- Designed and conducted 40+ in-depth interviews to identify pain points of CAD collaboration and version control.
- Designed and evaluated novel tooling concepts, including an AI-based CAD versioning system that reduced review time by 50%.
- Conducted usability evaluations with 30+ novice and expert designers, informing product improvements across skill levels.
- Built scalable analytics pipelines to analyze 33.9M+ user actions, uncovering workflow inefficiencies for 30+ engineers.
- Developed a Python-based large-scale text analysis system to synthesize 16K+ product reviews into actionable improvements.
- Presented findings to executives and domain experts, influencing tool design and research-to-product translation.

HCI Research Intern **05/2025 – 09/2025**
Autodesk *Toronto, ON*

- Designed and ran 30 user studies with Autodesk Fusion users to define criteria for helpful, actionable AI-generated feedback.
- Developed 6 AI-powered copilot concepts to support collaboration in 3D design workflows (Think Aloud project).
- Synthesized research insights into strategic design principles to inform feature prioritization and implementation decisions.
- Partnered closely with engineering, design, and product leadership to align research findings with roadmap planning.

Technology Consultant **05/2019 – 05/2023**
Scotiabank *Toronto, ON*

- Conducted stakeholder interviews and workflow analysis to identify pain points in remote work adoption, resulting in a rapid technology rollout that expanded capacity from 30% to 98% within 20 days.
- Designed automation tools to streamline the intern hiring process, reducing recruitment turnaround time by 30%.
- Led a telecommunications migration project for 300+ users, aligning technology integration with cross-departmental needs.
- Awarded PEY (Professional Experience Year) Co-op Student of the Year 2019-2020 for outstanding contributions.

Design Engineering Intern **09/2020 – 04/2021**
GlobalMedic *Toronto, ON*

- Led multidisciplinary team of 6 engineers to design a water purifier for 200+ communities, ensuring alignment with user needs.
- Applied human-centred design principles to define and prioritize performance metrics, leading to a 48% cost reduction.

Product Analyst Intern **05/2018 – 12/2018**
Marsh & McLennan *Toronto, ON*

- Conducted contextual inquiry and interviews to analyze end-to-end workflows for 100+ daily invoicing transactions.
- Developed automation workflows for invoice processing, reducing processing errors by 30% and manual effort by 50%.

Selected Projects

Dependency Visualization Tool | *Python Flask, Three.js, Onshape API* **2025**

- Developed a visualization tool for dependencies across 2K+ CAD files, improving user comprehension of complex relationships.
- Enhanced designers' confidence in making design changes through improved dependency tracking and information clarity.

Interview Study on CAD Collaboration | *NVivo, Miro* **2022**

- Conducted and qualitatively analyzed interviews with 20 engineers to uncover 14 key challenges in distributed collaboration.
- Synthesized research findings into 7 actionable recommendations to improve product usability and customer satisfaction.

Education

Ph.D. in Mechanical & Industrial Engineering **2026**
University of Toronto *Toronto, ON*

- Dissertation: Improving CAD collaboration through UX principles and agile software development insights.
- Recipient of NSERC (Natural Sciences and Engineering Research Council) Canada Graduate Scholarship ($120,000).

B.A.Sc. in Mechanical Engineering **2021**
University of Toronto *Toronto, ON*

Skills

UX Research: Study design, in-depth interviews; usability testing; surveys; workflow analysis; mixed-methods; prototyping
Data & Programming: Python; R; VBA; MATLAB; Jupyter Notebook; Google Colab; Copilot; Cursor
Other Software: Figma; Miro; NVivo; Dovetail; Qualtrics; UserTesting; Camtasia; Teams; Slack; OneDrive; SharePoint
Languages: English (fluent); Mandarin (advanced); French (intermediate)