

LILIANNA SIGALOVSKY

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EDUCATION

Tufts University, Medford/Somerville, MA

Expected 2027

M.S. Mechanical Engineering — Engineering Design & Prototyping

Tufts University, Medford/Somerville, MA

May 2026

B.S. Human Factors Engineering | Dean's List: Spring 2024 - Spring 2026

Selected Coursework: AI for Human Factors • Methods for Human Factors Engineering • Inventive Design • Ergonomics in Design • Differential Equations • Computer Interface Design • Human Factors in Medical Technology • Solid Mechanics • Materials & Manufacturing

TECHNICAL EXPERTISE

Engineering & Product Design: SolidWorks • Fusion 360 • OnShape • Mechanical Design • Rapid Prototyping • Manufacturing • Engineering Mechanics • Risk Analysis • Verification & Testing

Human Factors & Research: User Research • Usability Testing • Survey Design & Analysis • Observational Research • Personas • Heuristic Evaluation • Experimental Design • HCI • Human-AI Interaction • Accessibility

Quantitative & Computational: R • MATLAB • Excel Data Analysis • Probability & Statistics • Hypothesis Testing • t-Tests/z-Tests • ANOVA • Chi-Square • Linear & Logistic Regression • Nonparametric Methods • Differential Equations

Fabrication & Electronics: 3D Printing • Laser Cutting • Machining • Soldering • Heat Forming • Sand Casting • Injection Molding • Arduino • Raspberry Pi • KiCad

AI & Digital Prototyping: Figma • Lovable • ChatGPT • Claude • Gemini • Prompt Iteration • AI Output Evaluation • AI-Assisted Prototyping

SELECTED PROJECTS

AI-Assisted Used-Car Decision & Negotiation Platform

Human Factors Capstone — Team Project

- Designed AI-assisted decision-support interactions and interactive mockups in Figma and Lovable for vehicle comparison, dealer communication, price negotiation, and purchase decision support.
- Conducted interviews and usability testing as part of a team study with approximately 20 participants; translated findings into iterative improvements to layout, information presentation, and interaction behavior.
- Defined and evaluated how AI features should behave, including recommendation support and negotiation guidance, with emphasis on usability, user control, transparency, and effective human-AI interaction.

Assistive Technology Design — Tufts University

- Wheelchair Laptop Mount: Researched existing products and commercial components, collaborated directly with a power-wheelchair user and his family, and performed extensive hands-on fabrication and iterative prototyping. Delivered a working device that the client took home for regular use.
- Accessible Wheelchair Storage: Modeled a storage system in SolidWorks that allowed a wheelchair user to independently access a bag and personal items without increasing chair width; contributed to fabrication and produced a functional prototype mounted to the client's chair.

Human Factors in Medical Technology — Warning & Alarm Design

- Designed warning labels and auditory alarm concepts using human factors principles related to perception, cognition, urgency communication, usability, safety, and medical-device risk.

TEACHING & RESEARCH EXPERIENCE

Teaching Assistant — Methods for Human Factors Engineering, Tufts University

Fall 2026

- Selected as a Teaching Assistant after earning an A in the course; support instruction in surveys, personas, observational research, heuristic evaluation, human-centered design, and standards-informed design.
- Guide students in applying research methodology and human factors principles to engineering and design problems and in communicating the rationale behind methodological decisions.

Kaplan Neuro Group — Laboratory Assistant, Tufts University

Jan. 2023 - May 2024

- Supported research involving biological neural tissue derived from pluripotent stem cells and grown on silk-based scaffolds while following established experimental protocols.
- Processed silk-derived scaffold material and performed sample preparation, sectioning, immunostaining, high-resolution microscopy, and laboratory equipment maintenance.