Lara Zlokapa

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OBJECTIVE

I am eager to apply my engineering design, creative problem solving, and technical writing skills as well as my enthusiasm to empower others to live to their full potential. I enjoy taking on new challenges and developing innovative solutions.

EDUCATION

MIT (GPA 5.0/5.0) Sept. 2020 – May 2022 (Expected)
M.S., Mechanical Engineering
Folger Fellow (2020 – 2021)

University of California, Berkeley (GPA 3.7/4.0) Aug. 2016 – May 2020
B.S., Mechanical Engineering
Dean's Honors List Spring 2019, College of Engineering

AWARDS

- NSF GFRP Honorable Mention
- MIT Folger Fellow 2019-2020
- UC Berkeley Dean's Honors List Spring 2019, College of Engineering
- Finalist, 2017 Collegiate Poster & Rapid Fire Competition, Society of Women Engineers
- Committee Member of the Month (March 2017)

SPECIAL SKILLS

Design/Modeling: SolidWorks, AutoCAD, Rhino, GD&T dimensioning and tolerancing, FEA, DFM, DFS, 3D printing, machine shop skills (end mill, lathe, etc.), soldering, laser cutting, water jet cutting.
Programming: MATLAB, Python (basic), Arduino, LaTeX, HTML, CSS.
Writing/Communication: Business plan author, essay-writing teacher (high school level), team policy debater.
Languages: English (native), French (intermediate), German (beginner), Serbo-Croatian (beginner).

TECHNICAL EXPERIENCE

MIT, Cambridge, Massachusetts Sept. 2020 – Present
Graduate Student Researcher under Professors W. Matusik and P. Agrawal

- Designing of tendon-driven robot manipulators based on L-system grammar using python and SolidWorks.
- Prototyping (FDM 3D printing), controlling (python), and testing manipulators' ability to perform tasks.

SuitX, Emeryville, California May 2019 – Feb. 2020
Engineering Intern

- Independently designing exoskeleton solutions that fit all body sizes for heavy lifting.
- CADding (in SolidWorks), FDM 3D printing prototype models, and performing user testing.
- Conducting SolidWorks FEA on all components and performing physical testing until failure.

Berkeley Expert Systems Technologies (BEST) Lab, UC Berkeley, California Sept. 2018 – May 2019
Research Intern, Drumming Prosthesis Project under Professor Alice Agogino

- Design cost-effective drumming prosthetic for trans-radial amputees with 6 MEng and PhD students.
- Analyzed drummer survey responses to establish design criteria.
- Designed, FDM 3D printed adjustable drumstick-spring holder using BioFlex for body-powered prosthesis.

Applied BioMechanics, Alameda Island, California May 2018 – Jan. 2019
Engineering Associate in Accident Reconstruction Simulation

- Simulated vehicle collisions in HVE (dynamics software) and performed manual calculations to verify results.
- Laser scanned collision sites and vehicles and created 3D models of the scans in Rhino for 30+ court cases.

EnableTech, UC Berkeley, California Jan. 2018 – May 2018
Member, Gripper Project Team

- Designed and laser cut mechanical, cost-effective gripper in interdisciplinary team of 5 for quadriplegic user without grip strength to pick up objects from floor and shelf.

Berkeley Emergent Space Tensegrities (BEST) Lab, UC Berkeley, CA May 2017 – Nov. 2017
Research Intern, 6-Bar Tensegrity Robot Project under Professor Agogino

- Designed, 3D modeled (Autodesk Fusion 360), 3D printed, and directed final production of end caps with improved durability and frictionless cable movement for 6-bar spherical tensegrity search and rescue robot.
- Produced end cap dimension drawings in AutoCAD.
- Worked on overall 6-bar tensegrity robot design in team of 3 Ph.D. students and 3 undergraduate students.
- Soldered and assembled over 48 motor control circuit boards for 6-bar tensegrity robot.

PUBLICATIONS

J. Xu, T. Chen, **L. Zlokapa**, W. Matusik, S. Sueda, P. Agrawal, "An End-to-End Differentiable Framework for Contact-Aware Robot Design." *Robotics: Science and Systems (RSS)*, 2021. http://diffhand.csail.mit.edu/

LEADERSHIP & ACTIVITIES

UC Berkeley Girls in Engineering Summer Program May 2020 – Aug. 2020
Program Assistant

- Created lesson plans for virtual, 3-hour, hands-on, interactive Zoom classes of 100 middle school students.
- Led 80-100 middle school students through cardboard "robot" hand design and other activities over Zoom.
- Led discussions and learning exploration in breakout rooms of ten middle school students.
- Coordinated and trained 80+ adult volunteers over five weeks of camp for a high mentor-to-student ratio.

Human Powered Vehicles Club, UC Berkeley, CA Apr. 2018 – Aug. 2019
Co-President

- Managed all club operations and events (outreach, project management, resource management, overall timeline and scheduling, faculty sponsor coordination, subteam progress, sponsor relations, etc.).
- Created club budget, managed club expenses, and collaborated with sponsors (such as GM and Ford).
- Organized and scheduled all team activities (subteam progress, sponsor relations, outreach, etc.).

Society of Women Engineers, Berkeley, CA Jan. 2017 – May 2017
Committee Member of the Month (March 2017), Shadow an Engineer Committee Member

- Coordinated externships with 13 major companies, including AutoDesk.
- Created and evaluated applications for externships, selecting 30 out of the 60 applicants.

Pioneers in Engineering (PiE), UC Berkeley, CA Jan. 2017 – May 2017
Robotics Competition Team Mentor

- Mentored team of 10 El Cerrito High School students over 8 weeks for PiE robotics competition.
- Guided team's game strategy and analysis, robot design process, and building of actual robot.
- Awards team earned: 2nd place team, PiE Season Award, Software Award finalist.

Women in Science and Engineering, UC Berkeley, CA Aug. 2016 – May 2017
Conference Committee Member

- Organized and created schedule for all-day, 200-person STEM conference in 15-person team.
- Received and coordinated speakers at conference. Led conference Q&A session.
- Publicized conference through announcements at 100-600 person classes.

HOBBIES

Swing dancing, hiking, biking, violin, piano, baking bread, swimming, painting.