Daniel Lim

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APPOINTMENTS

Postdoc, 2025- — Mechanical Engineering, University of California, Berkeley
Advisor: Grace X. Gu

EDUCATION

PhD, 2022-2024 — Mechanical Engineering, University of California, Berkeley
Advisor: Grace X. Gu
Research topics: Data-driven design of multifunctional electromagnetic wave absorbing structures

MS, 2016-2018 — Mechanical Engineering, University of California, Berkeley
Advisor: Alice M. Agogino

BS, 2011-2014 — Mechanical Engineering, Korea University
Advisor: Wonjoon Choi

PUBLICATIONS

Selected Publications

P14 A tunable metamaterial microwave absorber inspired by chameleon's color-changing mechanism
Lim. D. D., Ibarra. A.I., Lee. J., Jung. J., Choi. W., & Gu. G. X.*
Science Advances, 2025 Featured in science.org website (01/15/2025)

P13 Multifunctional seamless meta-sandwich composite as lightweight, load-bearing, and broadband-electromagnetic-wave-absorbing structure
Lim. D. D.‡, Lee. J.W.‡, Park. J.W., Lee. J.M., Noh. D.W., Park. S.J., Gu. G. X*, & Choi. W.*
Additive Manufacturing, 2024

P12 Mechanical metamaterials as multifunctional broadband electromagnetic wave absorbers
Lim. D. D., Lee. S.R., Lee. J.H., Choi. W.*, Gu. G. X.*
Materials Horizons, 2024 Materials Horizons 2024 Most Popular Articles collection 🏆

P11 Multifunctionality of additively manufactured Kelvin foam for electromagnetic wave absorption and load bearing
Lee. J.W.‡, **Lim. D. D.‡**, Park. J.W., Lee. J.M., Noh. D.W., Gu, G. X.*, Choi. W.*
Small, 2023

P10 Broadband mechanical metamaterial absorber enabled by fused filament fabrication 3D printing
Lim. D. D.‡, Park. J.W.‡, Lee. J.M., Noh. D.W., Choi. J.H., & Choi. W.*
Additive Manufacturing, 2022

P9 High-resolution and electrically conductive three-dimensional printing of carbon nanotube-based polymer composites enabled by solution intercalation
Lim. D. D.‡, Lee. J.M.‡, Park J.W., & Choi. W.*
Carbon, 2022

Other Publications

P8 Bayesian-Optimized Riblet Surface Design for Turbulent Drag Reduction via Design-by-Morphing with Large Eddy Simulation
Lee. S, Sheikh HM, **Lim, D. D.**, Gu, G. X., Marcus, P. S.*
Journal of Mechanical Design, 2024

P7 Influence of bioinspired riblet topographies on the mitigation of flow-induced noise in towed sonar arrays
Wei, Z., Zhang, Z., **Lim, D. D.**, Rey, J., Jones, M., & Gu, G. X.*
Extreme Mechanics Letters, 2024

P6 Machine learning enabled optimization of showerhead design for semiconductor deposition process.
Jin, Z., **Lim, D. D.**, Zhao, X., Mamunuru, M., Roham, S., & Gu, G. X.*
Journal of Intelligent Manufacturing, 2023

P5 Rationally Tunable Phase Change Material Thermal Properties Enabled by Three-Dimensionally Printed Structural Materials and Carbon-Based Functional Additives.
Song, C., Lee, J., **Lim, D. D.**, & Choi, W.*
International Journal of Energy Research, 2023

P4 The origin of high-velocity impact response and damage mechanisms for bioinspired composites.
Lee, S., **Lim, D. D.**, Pegg, E., & Gu, G. X.*
Cell Reports Physical Science, 2022

P3 Temperature-responsive ultrasonic-wave engineering using thermo-responsive polymers.
Lee. S.J., Lee. H.M., **Lim. D. D.**, Song C.H., Choi. W.*
Advanced Functional Materials, 2021

P2 Customization of a 3D printed prosthetic finger using parametric modeling.
Lim, D., Georgiou, T., Bhardwaj, A., O'Connell, G. D., Agogino, A. M.*
IDETC-CIE, 2018

P1 Drill Sergeant: Supporting physical construction projects through an ecosystem of augmented tools.
Schoop, E., Nguyen, M., **Lim, D.**, Savage, V., Follmer, S., & Hartmann, B.*
CHI Conference, 2016

PATENTS

2021 Mechanical Meta-material based Electromagnetic Wave Absorber
Park, J., Song, J., Jeon, E., Lee, K., Choi, J., **Lim, D.**, Choi, W.
KR102413827B1

2021 Electrically Conductive Polymer Composites, Manufacturing Method Thereof 3D Printing method Using The Polymer Composites
Park, J., Song, J., Jeon, E., Lee, K., Choi, J., **Lim, D.**, Lee, J., Choi, W.
KR102669745B1

AWARDS AND HONORS

2025 Design Masterprize product design award [Link]
2024 Soft Robotics Cover [Link]: Volume 11, June 2024, The cover page of *Soft Robotics* journal.
2023 International Design Excellence Awards (IDEA) Finalist [Link]
2023 CITRIS Tech Museum Exhibitions: ARMS project. 3rd floor, Sutardjadai Hall, Berkeley
2022 International Design Award (IDA) Silver [Link]
2022 A' Design award Platinum (top 1%) [Link]
2021 Machine Learning Driven Service Using Non-verbal Sound Award, Korea. Gold prize
2021 Artificial Intelligence Driven Vehicle Exterior Service Award, Korea: Bronze prize
2018 Lawrence Hall of Science Prosthetic hand display [Link], [News – Daily Californian]
2018 Outstanding GSI Award, University of California Berkeley (Awarded to < 10%) [Link]
2016 SFMototype [Link]: First place in the design contest

FUNDING AND GRANTS

2024 BioEnginuity Impact Grant [Link]: Individual grant for doctoral and postdoctoral, awarded $80,000
2022 Heart to Humanity (H2H8) fellowship: Graduate research grant of $10,000 awarded by H2H8 Non-profit organization for research in the field of Engineering
2021 CITRIS Core Seed Funding: Lead graduate student researcher for ARMS project in collaboration with UC Davis. Received a $60,000 research grant.
2017 CITRIS Tech for social goods: Awarded a total of $4,000 research grant for prosthetic hand design projects with the title 'Helping hands'
2017 CITRIS Core Seed funding: Lead graduate student researcher for the 'Million Hands: Prosthetic hands for children through an open-source platform, 3D printers, and sensors' project, in collaboration with UC Davis. Received a $60,000 research grant.
2014 Korea Science and Engineering Full scholarship: Awarded a two-year full scholarship by the Korean government for STEM students demonstrating excellence in academics.

TEACHING EXPERIENCE

ME292C	Human-centered design methods (UC Berkeley) - Fall 2016, Fall 2017 Graduate Student Instructor (GSI) for a graduate course with a class size of 70 students, teaching human-centered design methods. Awarded the Outstanding GSI Award for the Fall 2017 class.
ME110	Introduction to Product Development (UC Berkeley) - Summer 2015, Spring 2016, Spring 2017 GSI for an undergraduate course on the product development process, including user needs finding, prototyping, and testing.
CS294/ ME290U	Interactive Device Design (UC Berkeley) - Fall 2016 GSI for the mechanical design component of a graduate-level course, teaching students from interdisciplinary majors to design interactive devices using rapid prototyping

ADVISING AND MENTORING

Masters Students	Alberto Ibarra (Fall 2015, Fall 2023 – Spring 2024) Undergraduate and master's research Eric Tai (Fall 2023 – Spring 2024) M.Eng research mentor for soft robotics project Jui-Che Chang (Fall 2023 – Spring 2024) M.Eng research mentor for prosthetic hand project M.Eng cohorts (Fall 2017 – Spring 2018) Million Hands project mentoring six M.Eng students
Undergrad Students	Hailey Collier (Summer 2023) Transfer-To-Excellence Program, prosthetic hand device Jacob Lopez (Summer 2022) Transfer-To-Excellence Program, semiconductor device design

OUTREACH

2024	Girls in Engineering (GiE) Berkeley - Volunteered as a mentor for the Girls in Engineering summer camp at UC Berkeley, an outreach program featuring hands-on workshops to middle and high school students. Taught middle and high school students how to use 3D printers and build prosthetic hands.
2022, 2023	Transfer To Excellence (TTE) Summer research program - Mentored community college students through a 9-weeks research program. Mentees successfully transferred to UC Berkeley and UC Davis.
2022, 2023	3D Printing Workshop - Conducted workshops introducing 3D printing and CAD modeling to undergraduate students. Activities included building a 3D printer from scratch and participating in a design competition sponsored by the department.

INVITED TALKS & PRESENTATIONS

2025	Nanyang Technological University, Department of Mechanical and Aerospace Engineering, invited by the department
2025	Stanford CHARM Lab, invited by Prof. Allison Okamura
2024	Korea University, invited Keynote, Invited by Prof. Sid Chung
2024	MRS Fall 2024, oral presentation, 'Additive Manufacturing of Multifunctional Meta-Sandwich Composites'
2020	MRS Fall 2020, oral presentation, 'Additive Manufacturing of Conductive Polymer Using Stereolithography'