DANIEL LOVELL
Embedded Systems Engineer

CONTACT

- ✉ dlovell98@berkeley.edu
- 🔗 Daniel Lovell | LinkedIn
- 🔗 github.com/daniellovell
- 📍 Berkeley, CA

PATENTS

Lidar system with projection capability.
Milanovic, V., Ristic, L., Kasturi, A., Lovell, D.
U.S. Patent Application No. 63/293,316.
Filed December 23, 2021.
Patent pending.

Radar system with projection capability.
Milanovic, V., Ristic, L., Kasturi, A., Lovell, D.
U.S. Patent Application No. 17/592,408.
Filed February 3, 2022.
Patent pending.

INDUSTRIES

- Optical MEMS
- LIDAR
- 3D Metrology
- Displays
- Robotics
- Biomedical Imaging
- Industry 4.0

REFERENCES

Veljko Milanovic, PhD
CEO
Mirrorcle Technologies
veljko@mirrorcletech.com

Abhishek Kasturi
Director of Hardware Engineering
Mirrorcle Technologies
abhishek@mirrorcletech.com

Summary

I'm an engineer with years of experience in software and systems for MEMS and optoelectronic sensors and actuators. In that time, I have published and presented papers on programmable light systems, MEMS-based LIDAR architectures, and the applications of MEMS in robotics. I enjoy working in areas where software and hardware meet to solve tangible problems.

Technical Expertise

- Software and systems for MEMS & optoelectronics
- Hardware interfaces and device drivers
- Control systems
- Digital & mixed signal circuits
- R&D prototyping
- MEMS engineering
- Robotics sensors & computer vision

RECENT PUBLICATIONS

Optical MEMS enable next generation solutions for robot vision and human-robot-interaction

Daniel Lovell, Veljko Milanovic, Abhishek Kasturi, Frank Hu, Karan Soni, Derek Ho, Bryan H. Atwood, Lj Ristic, Xiaomeng Liu, Sanjeev Koppal
SPIE 2022 OPTO Conference, San Francisco, CA
March 1, 2022

Comparison of MEMS Mirror LiDAR Architectures

Abhishek Kasturi, Veljko Milanovic, Daniel Lovell, Frank Hu, Derek Ho, Yu Su, Lj. Ristic
SPIE 2020 OPTO Conference, San Francisco, CA
February 1, 2020

MEMS Mirror Module for Programmable Light System

Abhishek Kasturi, Veljko Milanovic, Frank Hu, Hong Joo Kim, Derek Ho, Daniel Lovell
SPIE 2019 OPTO Conference, San Francisco, CA
February 3, 2019

WORK EXPERIENCE

UNDERGRAD. RESEARCHER
2022 - Present
Berkeley Sensor & Actuator Center

- Worked in the Berkeley Autonomous Microsystems Lab, advised by Prof. Kristofer Pister.
- Pursued research related to the single-chip micro mote (SCµM) and its present and future designs.
- Single-chip µV Precision ADC for SCµM-V

SOFTWARE ENGINEER
2018 - Present
Mirrorcle Technologies, Inc.

- Development for embedded systems in use in optoelectronic sensors and actuators.
- R&D of novel systems for optical MEMS (focus on control & communication)
- Characterization, modeling, and analysis of optical MEMS devices and manufacturing processes.
- Field application engineering to support customer product development

VOLUNTEERING

Open Source Initiative (OSI)
Member
Nov. 2018 - Present

Python Software Foundation
Member/Open Source Contributor
Oct. 2018 - Present

RECENT PROJECTS

MEMS mirror-based human detection and interaction system 🔗
Mirrorcle Technologies

A system that calibrates a programmable laser projector with a camera to project contextual graphics and information to nearby persons

Novel MEMS-based LIDAR imaging sensor 🔗
Mirrorcle Technologies

The synchronized MEMS pair LIDAR is a novel approach to maximizing optical SNR in a solid-state MEMS mirror LIDAR architecture

gestalt-arch: Architecture for Decentralized Robotics 🔗
UC Berkeley, EECS 149

A decentralized robotics control architecture intended for environments where networks of robots must be robust and tolerant to losses of communication or sensor feedback

HOBBIES & INTERESTS

- Game programming
- Game modding & reverse engineering
- Open-source software
- Flight simulation
- Weightlifting, skiing, and boxing

CONTACT

- ✉ dlovell98@berkeley.edu
- 🔗 Daniel Lovell | LinkedIn
- 🔗 github.com/daniellovell
- 📍 Berkeley, CA

EDUCATION

UNIVERSITY OF CALIFORNIA, BERKELEY   2020 - present
Berkeley, CA

Major: Computer Science
3.8 GPA
Courses: Advanced Topics in Circuit Design: 22nm SoC for IoT, Intro to Digital Design and Integrated Circuits, Intro to Embedded Systems, Operating Systems

UNITED STATES NAVAL ACADEMY   2017-2018
Annapolis, MD

Major: Chemistry/Pre-Medical Studies
3.9 GPA

UNIVERSITY OF NORTH GEORGIA   2016-2017
Dahlonega, GA

Major: Biology/Pre-Medical Studies
4.0 GPA

SKILLS

Languages
C/C++, MATLAB, Verilog, Chisel HDL, C# & .NET, Java

Tools
Xilinx Vivado, MATLAB Simulink & Simscape, Chipyard

Version Control
Git, GitHub, and GitLab

Development Environments
Visual Studio, IntelliJ IDEA, Android Studio