

# Maya M. Lassiter

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**I make electronics differently.** Most recently, the [world's first autonomous microscopic robot](#). My background is in experimental nanofabrication, scalable semiconductor process development, and iterative design for custom manufacture. My career has built novel electronics and solved field-based engineering challenges.

## Relevant Experience

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### **Autonomous Microscopic Robots (6 years)**

- Principal Investigator for the design and fabrication of the world's first autonomous microscopic robot
- Lead experimentalist, responsible for design of experiments, device characterization, testing, and analysis
- Invented foundry-compatible micromachining process at 55- and 28-nm CMOS technology nodes for scalable production
- Democratized new technology via open source low-cost kits for using and controlling microscopic robots
- Added to the Museum of Science and Industry and Computer History Museum permanent collections

### **Nanofabrication Process Engineer (2+ years)**

- Responsible for cleanroom processes across deposition, etching, lithography, packaging, and metrology
- Directed process documentation and training of new lab users
- Ensured lab upkeep for day to day operations supporting over 200 users
- Supported capital equipment move and install during cleanroom relocation

### **Packaging Engineer, Flexible Biophotonic Neural Probes (2 years)**

- Developed heterogeneous packaging process for chronic optogenetic brain stimulation with soft neural probes
- Invented a low-cost solution with commercial components and custom 3D printed parts
- Minutized from pumped benchtop laser to <1cm<sup>3</sup> mobile package for untethered chronic implantation

### **Carnegie Mellon Solar Racing (2 years)**

- Fabricated custom carbon fiber solar powered boat for international competition
- Built and maintained custom electrical system on-site in The Netherlands
- Pilot for part of multi-day racing through The Netherlands and exhibition in Monaco

### **Accessible Robotics: Braille Tutors (1 year)**

- Field engineer for deploying Stand-Alone Braille Tutors in rural India classrooms at the Mathru School for the Blind
- Directed hardware build and troubleshooting in classrooms with both Blind teachers and students
- Expanded Braille tutor functionality with new modes including Kannada language support

## Skills

Nanofabrication process development  
Chip-scale packaging  
Chip validation and mask layout  
Device characterization and analysis  
Python/C

## Recognition

University of Pennsylvania Presidential Fellow  
MIT Lincoln Lab GEM PhD Fellow  
Carnegie Mellon University Outstanding Woman in Engineering  
William J. Happel Fellow, GEM MS University Fellow  
Carnegie Mellon University Leadership Search Committee Member  
Member of: Fontaine Society, IEEE-HKN, SfN, OSA, APS

## Education

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PhD Electrical and Systems Engineering, University of Pennsylvania  
MS Electrical and Computer Engineering, Carnegie Mellon University  
BS Electrical and Computer Engineering, Minor in Global Engineering, Carnegie Mellon University