

**Luke Shi**  
(224)-723-6820  
lukeshi2017@u.northwestern.edu

## EDUCATION

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**Northwestern University** Sept 2016- current  
*Master of Science in Robotics* GPA: 4.0/4.0

**University of Pennsylvania** Aug 2014-Dec 2015  
*Master of Science in Engineering in Materials Science*

**University of Illinois at Urbana-Champaign** Aug 2010-May 2014  
*Bachelor of Science in Materials Science and Engineering*

### Relevant Coursework:

Computer Vision and Computational Photography, Embedded Systems in Robotics, Machine Dynamics, Robotic Manipulation, Introduction to Mechatronics, Statistical Pattern Recognition, Introduction to Sensor Networks

## PROJECTS

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**Independent Project:** Northwestern University Jan 2017-current  
*Graduate Student*

- Designing a simulator for multiple robots to test collision avoidance, path planning, and “swarm” formation
- Seeking to build real robots to experimentally validate the simulator results
- Software: ROS, Rviz

**Prof. John A. Rogers Group:** University of Illinois May 2011-May 2014  
*Undergraduate Researcher*

- Fabricated and characterized integrated thermochromic liquid crystal/stretchable RF devices for skin diagnostics. Developed reproducible fabrication process for device substrate. Assisted in thermal imaging measurements. Efforts facilitated creation of novel imaging platform to study vitals such as blood flow and hydration. Resulted in co-authorship on publication.
- Designed, fabricated, and tested epidermal electronic devices for vitals measurement, with more functionality and mechanical robustness than previous iterations. Assisted in preliminary device design. Optimized an experiment to quantify adhesion forces of candidate encapsulant materials. End result was a multifunctional device that was robust up to 2 weeks, even in harsher environmental conditions. Resulted in co-authorship on publication.

## PUBLICATIONS

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- “**Multifunctional Epidermal Electronics Printed Directly onto the Skin**” *Advanced Materials*. (Feb. 2013). Co-author
- “**Epidermal Photonic Devices for Precise Skin Temperature Mapping and Thermal Property Measurement**” *Nature Communications*. (Sept. 2014). Co-author

## CONFERENCES

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- L. Shi, W. Yeo, J.A. Rogers. “**Materials Selection and Device Design for Robust Epidermal Electronics.**” Materials Science and Technology Conference. Montreal, CA. October 2013.
  - 1<sup>st</sup> place in international Student Speaking Contest

## SKILLS

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- **Fabrication:** lithography (photo, nano-imprint, soft), PVD (e-beam evaporation), wet/dry etching (metal, polymer, silicon)
- **Characterization:** SEM, spectrophotometry, device characterization (I-V, IQE), DMA, profilometry
- **Software:** AutoCAD, ROS, Git, Gazebo, RViz
- **Programming:** MATLAB, Python, C/C++
- **Interests:** medical devices, medical robotics, IoT, machine learning, artificial intelligence
- **Languages:** English, Mandarin Chinese