

Chris Larson

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Education

Cornell University

Ph.D., Mechanical Engineering, May 2017
Minor field: Computer Science
M.S., Mechanical Engineering, 2015.

University of Missouri-Rolla

M.S., Materials Science, 2008

Coe College

B.A., Physics, 2006.

Professional Experience

Capital One

Washington, DC
Lead Software Engineer, Machine Learning (2017-present)

Corning Incorporated

Corning, NY
Research Engineer (2011-2013)

United Space Alliance, LLC

Cape Canaveral, FL
Engineer II (2009-2011)

Awards and Fellowships

NSF Integrative Graduate Education Research Traineeship

National Science Foundation
\$60,000 (2015-2016)

NSF Grant No. 1537715 (co-wrote)

National Science Foundation
\$225,000 (2015)

NASA Strategic University Research Partnerships Grant

Jet Propulsion Laboratory
\$100,000 (2015)

Sigma Pi Sigma Physics Honor Society

The Physics Honor Society
Member (2004-2006)

Journals Articles

- [1] C. Larson. Mastering the game of Checkers with policy gradients and deep neural networks. **In preparation** (2017).
- [2] C. Larson, J. Spjut, R. Knepper, R. Shepherd. A Deformable Interface for Human Touch Recognition using Stretchable Carbon Nanotube Dielectric Elastomer Sensors and Deep Neural Networks. **In review.** (2018).
- [3] B. Peele, S. Li, C. Larson et. al., Vanishing Interfaces: Untethered stretchable displays for tactile interaction. **Accepted, Soft Robotics** (2018).
- [4] S. Li, B. Peele, C. Larson et al., Stretchable multicolor display enabled by photo-patterning and transfer printing. **Advanced Materials** (2016).
- [5] C. Larson, et al., Highly stretchable electroluminescent skin for tactile sensing and optical signaling. **Science** (2016).
- [6] Robinson S., O'Brien K., Zhao H., Peele B., Larson C. et al., Integrated soft sensors and elastomeric actuators for tactile machines with kinesthetic sense. **Extreme Mechanics Letters** (2015).
- [7] C. Larson, et al., Direct ink writing of silicon carbide for microwave optics. **Advanced Engineering Materials** (2015).
- [8] B.G. Parkinson, D. Holland, M.E. Smith, C. Larson et al., Quantitative measurement of Q₃ species in silicate and borosilicate glasses using Raman spectroscopy. **Journal of Non-crystalline Solids** (2008).
- [9] C. Larson, et al., A ²⁹Si MAS NMR study of silicate glasses with high lithium content. **Journal of Physics: Condensed Matter** (2006).

Conference Talks

- [1] C. Larson, R. Knepper, R. Shepherd, Orb-touch: using deformation as a medium for human-computer interaction (2016). **Northeast Robotics Colloquium, Ithaca, NY.** (2016).
- [2] C. Larson, et. al., Soft Robots with Large Amplitude Actuation, Sensory Skins, and Dynamic Coloration. **MRS, Boston, MA.** (2016).

Patents

Stretchable electroluminescent devices and methods of making and using same. **U.S. Pat. No. WO2017079445.** (2017).

Press

Science Magazine Podcast (podcast interview, 2016).
Discovery Channel (2016). Robotic Skin. Daily Planet.
Popular Mechanics (2016). Stretchy Glow-in-the-Dark Octopus Skin for Robots Is Real.

Press cont. **Wired** (2016). Ecco la pelle artificiale super-elastica e luminosa.
CS Monitor (2016). This new robot skin can glow, stretch – and walk.
Washington Post (2016). With artificial ‘octopus skin,’ robots can bend and stretch while changing color.
Gizmodo (2016). This Stretchy, Light-up Skin is the First Step to a Robotic Octopus.
El Mundo (2016). Una piel superelástica para robots inspirada en los pulpos. **Popular Science** (2016) Soft Wormbot Tries Out New Light-up Skin.
Scientific American (2016). Octopus Skin Inspires Clothes That Double as Displays.
New Scientist (2016). Super-stretchy robot skin can become brighter when it bends.
RCS Chemistry World (2016). Touch sensitive super stretchy skin shows promise for soft robots.
The Verge (2016). Watch a stretchy robot test its octopus-inspired skin.

Selected Coursework Methods of Applied Mathematics (MAE 6810) **Cornell University**
Machine Learning for Intelligent Systems (CS 5780) **Cornell University**
Machine Learning for Data Science (CS 5786) **Cornell University**
Advanced Artificial Intelligence (CS 6700) **Cornell University**
Foundations of Solid Mechanics (TAM 6630) **Cornell University**

Programming **OS:** *nix, Bash. **Languages:** Python, C++, R. **Frameworks:** Tensorflow, Theano, MxNet, Caffe2, PyMC3, OpenCv, CUDA, cuDNN.