

Chris Larson

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Education

Cornell University

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

Cornell University

M.S., Mechanical Engineering, 2015

University of Missouri-Rolla

M.S., Materials Science & Engineering, 2008.

Professional Experience

Capital One

Washington, DC

Lead Software Engineer, Eno Platform (2017-present)

Acomplishments: Developed and built the production language, intent, and entity recognition models that enable natural language understanding in Capital One's virtual assistant Eno.

In-development: Search + autocomplete for Capital One web.

Deep reinforcement learning for conversational dialogue.

Corning Incorporated

Corning, NY

Research Engineer (2011-2013)

Acomplishments: Developed a slow-crack-growth model, along with an accompanying measurements and data pipeline, used to predict fatigue and fracture in brittle solids at Corning.

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)

Selected
Articles
& Talks

- [1] C. Larson. Mastering the game of Checkers with proximal policy optimization and Monte Carlo tree search. **In preparation** (2018).
- [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. **Soft Robotics** (2018).
- [4] C. Larson, R. Knepper, R. Shepherd, Orb-touch: using deformation as a medium for human-computer interaction (2016). **Northeast Robotics Colloquium, Ithaca, NY.** (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] 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).
- [8] C. Larson, et al., A ²⁹Si MAS NMR study of silicate glasses with high lithium content. **Journal of Physics: Condensed Matter** (2006).

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.
Wired (2016). Ecco la pelle artificiale super-elastica e luminosa.
Gizmodo (2016). This Stretchy, Light-up Skin is the First Step to a Robotic Octopus.

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. **Languages:** Python, C++, R, Bash, HTML, CSS, js.
Frameworks: Tensorflow, MxNet, PyMC3, OpenCv, CUDA, cuDNN.
Deployment Tools: Docker, AWS