

# Ben Hammel

Redwood City, CA

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## Education

### Doctorate of Philosophy - Physics

The University of Nevada, Reno Aug. 2016

### Graduate Minor - Business Administration

The University of Nevada, Reno June 2014

### Bachelor of Science - Physics

The University of California, Santa Barbara June 2010

## Experience

### Mythic Inc.

Redwood City, CA

#### DEEP LEARNING SCIENTIST - DEEP LEARNING RESEARCH TEAM

Mar. 2018 - Present

- Leading rapid-prototyping projects to explore **real-world application** of cutting-edge deep learning solutions in computer vision

### Lawrence Livermore National Laboratory

Livermore, CA

#### COLLABORATING SCIENTIST

Nov. 2019 - Present

- Providing technical guidance on using neural networks for regression and unsupervised machine learning to develop **novel data analysis** techniques to support experimental work at the National Ignition Facility

### Insight Data Science

Palo Alto, CA

#### TECHNICAL ADVISOR - ARTIFICIAL INTELLIGENCE PROGRAM

Mar. 2018 - Present

- **Mentoring** groups of people on **research and engineering projects** across a variety of applications in the deep learning space
  - Computer vision
  - Generative Adversarial Networks
  - Deep Reinforcement Learning

#### FELLOW - ARTIFICIAL INTELLIGENCE PROGRAM

Jan. 2018 - Mar. 2018

- Consulted for Harvesting Inc., focused on leveraging AI and remote-sensing to assist farmers in rural areas and developing countries
- Engineered and implemented a **deep neural network** for **object detection** and identification in high-resolution satellite images
- Applied techniques in **transfer learning** and **data augmentation** to achieve high-accuracy in performance despite limited data

### Institute for Shock Physics

Pullman, WA

#### POSTDOCTORAL RESEARCHER - WARM DENSE MATTER GROUP

Oct. 2016 - Jan. 2018

- Worked with a small team to develop a high-intensity laser system for a first-of-its-kind research facility
- **Spearheaded research efforts** encompassing multiple engineering disciplines: electrical engineering, mechanical engineering, chemistry, and computer programming
- Developed routines using Python for **error analysis**, interfacing with commercially-available software, and **image processing** to streamline the work of colleagues

### Nevada Terawatt Facility

Reno, NV

#### GRADUATE RESEARCHER - PULSED POWER GROUP

Aug. 2011 - Sep. 2016

- **Organized interdisciplinary teams** (~5 people) on a biannual basis to complete short-term (~2 week), high-value (>\$30,000), projects to support the interests of the Department of Energy and National Nuclear Security Agency
- Built and fielded **highly-technical diagnostic systems** (optical, X-ray, and nuclear) to explore fundamental questions in high-energy-density physics
- Performed physics simulations, using **massively-parallel computing platforms**, to analyze and interpret experimental results

## Skills

#### Scientific expertise

High-energy-density experimental physics - matter under extreme conditions

#### Languages

Python (10+ years), Yorick (5 years), and C++ (2 years)

#### iOS & web development

Django, Swift, HTML, CSS, and Javascript

#### Machine learning

TensorFlow, Keras, Pytorch, and Scikit-learn

#### Best Practices

PEP8, test driven development, Travis CI, Docker, Git

#### Rapid-prototyping & design

Machining, welding, CAD, and analog/digital circuit design