Curriculum Vitae

# Ryan Matthew Farrell

farrell@cs.byu.edu · webpage · (650) 380-1184

## Personal Information

### Current Positions

Associate Professor, Computer Science Department, **Brigham Young University (BYU)**, Provo, UT

### Education

**University of Maryland** - College Park, MD
Ph.D. in Computer Science, May 2011, 3.8 GPA
Advisor: Professor Larry S. Davis
*"Learning Visual Patterns: Imposing Order on Objects, Trajectories and Networks"*
M.S. in Computer Science, December 2006
Advisor: Professor Larry S. Davis

**University of California** - Berkeley, CA
B.S. in Electrical Engineering and Computer Science, August 2001

### Employment

| | |
|---|---|
| 2019-present | Associate Professor |
| 2013-2019 | Assistant Professor<br>Computer Science Department, Brigham Young University (BYU) |
| 2012-2013 | Research Scientist (with Professor Trevor Darrell) |
| 2011-2012 | Postdoctoral Fellow (with Professor Trevor Darrell)<br>International Computer Science Institute / UC Berkeley |
| 2006-2011 | Graduate Research Assistant (with Professor Larry Davis)<br>University of Maryland, College Park |

## Research and Scholarly Activities

### Funded Research

*Inverse Origami: Generalized Pose-normalization for Large-scale Fine-grained Recognition*, Ryan Farrell, National Science Foundation (NSF), CAREER Program Award, $512,576, for the period 6/2017-6/2022.

*Object Recognition in Imagery and Video (phase 2)*, Ryan Farrell, Lawrence Livermore National Laboratory (DOE), $89,108, for the period 12/2015-12/2016.

*Information-Based Solider-Robot Interaction*, Marc Killpack, Ryan Farrell, Michael Goodrich, Army Research Lab, RCTA Consortium, $86,171, for the period 07/2015-07/2016.

*Object Recognition in Imagery and Video*, Ryan Farrell, Lawrence Livermore National Laboratory (DOE), $67,965, for the period 03/2015-09/2015.

**Students Advised**

Graduate Students

Suguru Onda, *MS Student*, April 2019 - present

Connor Anderson, *PhD Student*, April 2019 - present

*MS Student*, Jan. 2018 - December 2019 (anticipated)

Greg Sadler, *MS Student*, 2018 - April 2019

Pei Guo, *PhD Student*, Aug. 2015 - present (anticipated graduation in December 2019)

Tim Price, *MS Student*, Sept. 2013 - June 2017

Undergraduates

Jamison Moody, 2019 - present

Rebecca Haggard, 2019 - present

Isabel Hilton, 2019 - present

Thomas Cole, 2019 - present

Adam Teuscher, 2019 - present

Andrew Merrill, 2019 - present

Taylor Sorensen, 2019 - present

Gabriel Cano, 2019 - present

Ben Clough, 2019 - 2019

Dillon Harris, 2019 - present

Cody Kesler, 2019 - 2019

Matthew Gwilliam, 2018 - present

Gabriel Cano, 2018 - 2019

Jeff Hilton, 2018 - 2019

Jared Rydalch, 2018 - 2019

Kevin Thompson, 2018 - 2019

Trayson Keli'i, 2018 - 2018

Mohit Khattar, 2018 - 2018

Andrew Tate, 2018 - 2018

Ben Jafek, 2018 - 2018

Andrew Hale, 2017 - 2018

Samuel Heydorn, 2017 - 2017

Jacob Hill, 2017 - 2017

William Jones, 2017 - 2017

Ryan DeFigueiredo, 2017 - 2017

Kolten Pearson, 2015 - 2018

Connor Anderson, 2014 - 2017

Jared Ryrie, 2014 - 2014

Matthew Heydorn, 2014 - 2017

Annette Heydorn, 2014 - 2015

Adam Rogers, 2014 - 2015

**Awards**

**Faculty Excellence in Teaching Award (3-10 Years)**, College of Physical and Mathematical Sciences, Brigham Young University, February 2018

**NSF CAREER Award**, February 2017

**Best Paper Award**, International Conference on Intelligent Sensors, Sensor Networks and Information Processing (ISSNIP), 2007. For paper: "Localization in Multi-Modal Sensor Networks," by Ryan Farrell, Roberto Garcia, Dennis Lucarelli, Andreas Terzis, I-Jeng Wang.

**Selected Publications (in refereed Journals, Conferences and Workshops)**

Pei Guo, Ryan Farrell, "Fine-grained Visual Categorization (FGVC): A Comprehensive Survey", IEEE Transactions on Pattern Analysis and Machine Intelligence (PAMI), (*in preparation*).

Pei Guo, Ryan Farrell, "Aligned to the Object, not to the Image: A Unified Pose-aligned Representation for Fine-grained Recognition", IEEE Winter Conference on Applications of Computer Vision (WACV), January 2019.

Abhimanyu Dubey, Otkrist Gupta, Pei Guo, Ryan Farrell, Ramesh Raskar, Nikhil Naik, "Improving Fine-Grained Visual Classification using Pairwise Confusion", European Conference on Computer Vision (ECCV), September 2018.

Grant Van Horn, Steve Branson, Ryan Farrell, Serge Belongie, Pietro Perona, "The Fine Print in Fine-grained Dataset Collection", Computer Vision and Pattern Recognition (CVPR), June 2015.

Sergio Guadarrama, Erik Rodner, Kate Saenko, Ning Zhang, Ryan Farrell, Jeff Donahue, Trevor Darrell, "Open-vocabulary Object Retrieval ", Robotics Science and Systems (RSS), July 2014.

Ning Zhang, Ryan Farrell, Forrest Iandola, Trevor Darrell, "Deformable Part Descriptors for Fine-grained Recognition and Attribute Prediction", International Conference on Computer Vision (ICCV), Dec 2013 (28% acceptance).

Ning Zhang, Ryan Farrell, Trevor Darrell, "Pose Pooling Kernels for Sub-category Recognition", Computer Vision and Pattern Recognition (CVPR), June 2012 (26% acceptance).

Ryan Farrell, Om Oza, Ning Zhang, Vlad Morariu, Trevor Darrell, Larry S. Davis, "Subordinate Categorization Using Volumetric Primitives and Pose-Normalized Appearance", International Conference on Computer Vision (ICCV), November 2011 (**Oral**, only about 4% acceptance).

Ryan Farrell, Roberto Garcia, Dennis Lucarelli, Andreas Terzis, I-Jeng Wang,
"Target Localization in Camera Wireless Networks", Pervasive and Mobile Computing, April 2009.

Ryan Farrell and Larry S. Davis,
"Decentralized Discovery of Camera Network Topology", International Conference on Distributed Smart Cameras (ICDSC), September 2008.

Dennis Lucarelli, Anshu Saksena, Ryan Farrell, I-Jeng Wang,
"Distributed Inference for Network Localization using Radio Interferometric Ranging", European Conference on Wireless Sensor Networks (EWSN), January-February 2008.

Ani Kembhavi, Ryan Farrell, David Jacobs, Ramani Duraiswami, Larry S. Davis,
"Tracking Down Under: Following the Satin Bowerbird", Workshop on Applications of Computer Vision (WACV), January 2008.

Ryan Farrell, Roberto Garcia, Dennis Lucarelli, Andreas Terzis, I-Jeng Wang, "Localization in Multi-Modal Sensor Networks", International Conference on Intelligent Sensors, Sensor Networks and Information Processing (ISSNIP), December 2007. **Best Paper Award**.

Ryan Farrell, David Doermann, Larry S. Davis, "Learning Higher-order Transition Models in Medium-scale Camera Networks", ICCV Workshop on Omnidirectional Vision, Camera Networks and Non-classical Cameras (OMNIVIS), October 2007.

## Teaching

### Assistant Professor, Brigham Young University (BYU)

| | |
|---|---|
| Fall 2019 | CS 493R: Competitive Programming and Coding Interview Preparation |
| | CS 650R: Inference and Recognition in Visual Domains |
| Winter 2019 | CS 312: Algorithm Design and Analysis (*2 sections*) |
| | CS 450: Computer Vision |
| Spring 2018 | CS 601R: Inference and Recognition in Visual Domains |
| Winter 2018 | CS 312: Algorithm Design and Analysis (*2 sections*) |
| | CS 450: Image Processing and Computer Vision |
| Winter 2017 | CS 312: Algorithm Design and Analysis (*2 sections*) |
| | CS 450: Image Processing and Computer Vision |
| Fall 2016 | CS 601R: Inference and Recognition in Visual Domains |
| Winter 2016 | CS 142: Introduction to Computer Programming (C++) (*2 sections*) |
| | CS 401R: Projects in Computer Vision |
| Fall 2015 | CS 450: Image Processing and Computer Vision |
| | CS 601R: Inference and Recognition in Visual Domains |
| Winter 2015 | CS 142: Introduction to Computer Programming (C++) (*2 sections*) |
| Fall 2014 | CS 450: Image Processing and Computer Vision |
| Summer 2014 | CS 142: Introduction to Computer Programming (C++) |
| Winter 2014 | CS 142: Introduction to Computer Programming (C++) |
| Fall 2013 | CS 450: Image Processing and Computer Vision |

## Service

### Professional

*Program Chair* - Indian Conference on Computer Vision, Graphics and Image Processing (ICVGIP), 2020.

*Program Chair* - Winter Conference on Applications of Computer Vision (WACV), 2020.

*Area Chair* - Computer Vision and Pattern Recognition (CVPR), 2019.

*Area Chair* - Winter Conference on Applications of Computer Vision (WACV), 2019.

*Area Chair* - Indian Conference on Computer Vision, Graphics and Image Procesing (ICVGIP), 2018.

*Local Arrangements Chair* - Computer Vision and Pattern Recognition (CVPR), 2018.

*Area Chair* - Computer Vision and Pattern Recognition (CVPR), 2016.

*Program Chair* - SIBGRAPI 2015 (Conference on Graphics, Patterns and Images)

*Organizer* - `SixthWorkshoponFine-grainedVisualCategorization(FGVC6)`, 2019.
`FifthWorkshoponFine-grainedVisualCategorization(FGVC5)`, 2018.
`WorkshoponVisualWildlifeMonitoring(VWM)`, 2017.
`FourthWorkshoponFine-grainedVisualCategorization(FGVC4)`, 2017.
`ThirdWorkshoponFine-grainedVisualCategorization(FGVC^3)`, 2015.
`SecondWorkshoponFine-grainedVisualCategorization(FGVC^2)`, 2013.
`FirstWorkshoponFine-grainedVisualCategorization(FGVC)`, 2011.

*Website Chair/Co-chair* - Computer Vision and Pattern Recognition (CVPR), 2010, 2012 - 2014.
International Conference on Computer Vision (ICCV), 2013, 2015.

*PC Member* - International Conference on Computer Vision (ICCV), 2011 - present *(odd years)*.
Computer Vision and Pattern Recognition (CVPR), 2010 - present.
European Conference on Computer Vision (ECCV), 2010 - present *(even years)*.

*Reviewer* - International Journal of Computer Vision (IJCV), FROM 2010.
IEEE Transactions on Pattern Analysis and Machine Intelligence (PAMI), FROM 2012.