

# Joseph Robinson

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## Summary

2<sup>nd</sup> year PhD Candidate interested in applied machine learning, with emphasis on computer vision.

## Education

### PHD | MAY 2019 | NORTHEASTERN UNIVERSITY

- Major: Computer Engineering
- Related coursework: Pattern Recognition (I & II), Advanced Computer Vision, Human-Computer Interaction, Assistive Robotics, Natural Language Processing, 2D Signal and Image Processing

### BS | MAY 2014 | NORTHEASTERN UNIVERSITY

- Major: Electrical and Computer Engineering
- Related coursework: Computer Vision, Digital Image Processing, Found Visualization, Robotics, Optimization Methods, Algorithms & Data Structures, Noise and Stochastic Processes

## Related Experiences

### PHD RESEARCH ASSISTANT | SYSTEMS AND TECHNOLOGY RESEARCH (STR) | 05/16-CUR

- Responsibilities and tasks were assigned as part of the JANUS Phase II effort: (1) I implemented Product Quantization & nearest neighbor search using an Inverted File Structure to gain a 200x speedup, with minimal loss in terms of accuracy; (2) I developed C++ clustering toolbox (i.e., K-Means, GMM, Spectral, Rank-Order).

### ENGINEERING INTERN | MIT LINCOLN LABS | 05/14-08/14

- Led team and the building of our system for our début in NIST's TRECVID workshop series. Ultimately, we ranked 3rd in terms of top accuracies for Multimedia Event Detection (MED).

### DSP ENGINEERING CO-OP | BBN TECHNOLOGIES | 01/13-09/13

- Worked on Helicopter Alert and Threat Termination-Acoustic (HALTT-A) System, a small arms detection system installed on helicopters.

### EE IMAGE RECONSTRUCTION CO-OP | ANALOGIC CORPORATION | 01/12-09/12

- The focus of the group was directed towards SW components: the critical image processing algorithms and the detection functionalities integrated into a CT airport bag-scanners. My contributions mainly concerned with the product transitioning from the single-energy to the dual-energy CT system.

## Credentials

### PUBLICATIONS

- Shuyang Wang, Joseph P Robinson, and Yun Fu. "Kinship Verification on Families in the Wild with Marginalized Denoising Metric Learning," in *IEEE Automatic Face and Gesture Recognition* (2017).
- Joseph P Robinson, Ming Shao, Yue Wu, and Yun Fu. "Families In the Wild (FIW): large-scale kinship image database and benchmarks." In *Proceedings of the 2016 ACM on Multimedia Conference* (2016).

- Joseph P Robinson, Ming Shao, Yue Wu, and Yun Fu. "Family In the Wild (FIW): a large-scale kinship recognition database." *arXiv preprint arXiv:1408.5093* (2016).
- Joseph P Robinson and Yun Fu. "Pre-trained D-CNN models for detecting complex events in unconstrained videos." *SPIE Commercial+ Scientific Sensing and Imaging* (2016).
- Joseph P. Robinson, Edward Scott, and Yun Fu. "NEU- MITLL @ TRECVID 2015: Multimedia Event Detection by Deep Feature Learning." *In Proceedings of TRECVID 2015*, NIST, USA (2015).
- Yair Mega, Josef Kerimo, J P Robinson, A Vakili, N Johnson, C. A DiMarzio. "Three-photon fluorescence imaging of melanin with a dual-wedge confocal scanning system." *SPIE Optics & Photonics* (2012).
- T Swedish, J P Robinson, M Silva, A Gouldstone, D Kaeli, C A DiMarzio, "Computational model of optical scattering by elastin in lung," *Three- Dimensional & Multidimensional Microscopy* (2011).

## AWARDS

- ALERT DHS HS-STEM Career Development Program Research Assistantship 09/15-09/18
- ECE Department winner for Senior Capstone Competition (1st Place) 05/14
- Northeastern University's 'Huntington 100' Awardee 04/14
- CDSP Research Workshop Award for Best Poster 03/14
- IEEE and ECE Department Winner for T-shirt Design Contest 03/14
- SGA Senator of the Month 09/13
- Outstanding Student Research in Engineering and Technology, RISE 2012 03/12
- ECE Department winner for remote control circuit design (1st Place) 05/11
- Investing in Tomorrow's Engineering Leaders Scholarship, NSF 01/11-05/14
- Dean's Achievement Award (6 semesters)

## LISCENSES AND CERTIFICATES

- Certificate of Completion: Gordon Engineering Leadership Program, CENSSIS 02/12
- Computer Aided Drafting Certificate, Northern Essex Community College 05/10
- Home Improvement Contractor License, The Commonwealth of Massachusetts 05/07
- Massachusetts Construction Supervisor's License (CSL), Merrimac College 05/06

## Skills and Activities

### COMPUTER SOFTWARE AND ARCHITECTURE

Basic	CUDA, shell scripting
Intermediate	Python, C, Git, Linux, Microsoft Windows (2000–present)
Advanced	MATLAB, JAVA, C++

### PERSONAL

- Demonstrated ability with working on research-based projects and tasks.
- Excellent interpersonal, problem-solving and analytical skills.
- Confident public speaker, regardless of the audience.
- Exceptional with hands-on: wired electronics, woodworking, part assembling, etc.
- Proved capable to act as a contributing team member, as well as a team leader.

### INTERESTS

- Traveling
- Ice Hockey
- Skiing
- Cooking
- Boating & Fishing