

Cameron Blocker

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Computational Imaging, Image Reconstruction, Large-Scale Optimization

Education

Ph.D. Electrical and Computer Engineering, *University of Michigan* May 2021

- Researching image processing and reconstruction for light-field cameras
- Certificate program in Computational Discovery & Engineering

M.S. Electrical and Computer Engineering, *University of Michigan* Dec 2018

- 3.71 GPA

B.S. Electrical Engineering, *Brigham Young University* Aug 2016

- 3.99 GPA
- Recipient of Tau Beta Pi Scribner Scholarship for 2015-16
- Minors in Computer Science and Mathematics

Experience

Image Science Intern, *Radiant Solutions* May 2018 – Aug 2018

- Explored and Implemented sparsity-based and deep learning-based image regularization for multi-frame de-aliasing and super-resolution of geo-spatial images.

Research Assistant, *BYU Electro-Holography Lab* Sept 2014 – Aug 2016

- Researched methods for improved hologram display resolution by redesigning scan control circuitry, 3D printed parts and firmware
- Implemented hologram algorithms on GPUs for real-time 3D video rendering

DDG Technical Intern, *Intel, Device Development Group* May 2015 – Aug 2015

- Developed Python library to assist post-silicon debug of SoC clocks
- Designed experimental RTL clock hardware for SoCs in SystemVerilog

Leadership

Chair, *BYU IEEE Student Branch* April 2015 – Jan 2016

- Led team of 8 individuals in planning, organizing and conducting activities for as many as 200 students

Full-time Volunteer Representative, *LDS Church, Cambodia* Dec 2011 – Dec 2013

- Conducted, planned, and taught at meetings for groups of up to 20 volunteers on ethics, communication and teaching skills

Skills

- Image Restoration and Reconstruction
- Applied Large-Scale Optimization
- Image system modeling
- Optical bench prototyping
- Embedded firmware programming
- Programming (by experience level)
 - Python
 - Julia
 - MATLAB
 - Rust

Professional Societies

- Member of IEEE (Signal Processing Society and Computer Society)
- Member of SIAM

Publications

Conference Papers

- **C. J. Blocker**, I. Y. Chun, J. A. Fessler, “Low-Rank plus Sparse Tensor Models for Light-field Reconstruction from Focal Stack Data,” in IEEE Image, Video, and Multidimensional Signal Processing (IVMSP) Workshop, 2018
- S. Ravishankar, A. Lahiri, **C. Blocker**, and J. A. Fessler, “Deep Dictionary-Transform Learning for Image Reconstruction,” in IEEE International Symposium on Biomedical Imaging (ISBI), 2018