

# Brevin Tilmon

Homepage: <https://btilmon.github.io>

Email: [btilmon@ufl.edu](mailto:btilmon@ufl.edu)

## Education

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### University of Florida

2019 - Present

Ph.D. Electrical and Computer Engineering

Advised by Dr. Sanjeev Koppal

### Murray State University

2015 - 2019

B.S. Engineering Physics

GPA: 3.8/4.0

Courses: Linear Algebra, Calculus II and III, Differential Equations, Geometric and Wave Optics, Advanced Electromagnetism, Quantum Mechanics, Machine Learning, Digital Signal Processing (continuous and discrete), Digital Circuits and Systems, Circuit Theory, Control Systems, Robot Dynamics

## Experience

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### Facebook

2021 - Present

*Research Intern, Facebook Reality Labs, Advised by Dr. Shuochen Su*

- Developing computer vision and machine learning depth perception algorithms for AR/VR.

### NASA

2021

*Research Intern, Intelligent Robotics Group, Advised by Dr. Uland Wong*

- Developed 3D reconstruction and neural inverse rendering algorithms for an internal computational imaging sensor.
- Developed a computational imaging sensor simulator with NVIDIA OptiX ray tracer to benchmark various algorithms.

### University of Florida

2019 - Present

*Graduate Research Assistant, Advised by Dr. Sanjeev Koppal*

- Developed novel computer vision and machine learning algorithms.
- Developed custom computational imaging hardware.

## Publications

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1. **SaccadeCam: Adaptive Visual Attention for Monocular Depth Sensing**  
B. Tilmon and S. J. Koppal  
International Conference on Computer Vision (ICCV), 2021
2. **Fast Foveating Cameras for Dense Adaptive Resolution**  
B. Tilmon, E. Jain, S. Ferrari and S. J. Koppal  
Transactions on Pattern Analysis and Machine Intelligence (PAMI), 2021
3. **FoveaCam: A MEMS Mirror-Enabled Foveating Camera**  
B. Tilmon, E. Jain, S. Ferrari and S. J. Koppal.  
International Conference on Computational Photography (ICCP), 2020
4. **Towards a MEMS-based Adaptive LIDAR**  
F. Pittaluga, Z. Tasneem, J. Folden, B. Tilmon, A. Chakrabarti and S. J. Koppal.  
International Conference on 3D Vision (3DV), 2020
5. **Design and Calibration of a Fast Flying-Dot Projector for Dynamic Light Transport Acquisition**  
K. Henderson, X. Liu, J. Folden, B. Tilmon, S. Jayasuriya and S. J. Koppal.  
Transactions on Computational Imaging 2020
6. **Novel Approach of Wavelet Analysis for Nonlinear Ultrasonic Measurements and Fatigue Assessment of Jet Engine Components**  
G. Bunget, B. Tilmon, A. Yee, D. Stewart, J. Rogers, et al.  
American Institute of Physics 2018

## Skills

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**Software:** Python, C++, PyTorch, CUDA, NVIDIA OptiX, Mitsuba

**Hardware:** Depth/RGB Cameras, Embedded Systems, Optics Bench