

Brevin Tilmon

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Education

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, Digital Circuits and Systems, Circuit Theory, Control Systems, Robot Dynamics

Experience

Meta

2021 - Present

Research Intern, [Reality Labs](#), Advised by Dr. Shuochen Su

- Developed an efficient machine learning based depth prediction algorithm for an augmented reality system.
- Benchmarked various depth prediction algorithms on internal rendering engines for occlusion performance.

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 simulator with C++ and CUDA to benchmark various algorithms [[link](#)].

University of Florida

2019 - Present

Graduate Research Assistant, [FOCUS Lab](#), Advised by Dr. Sanjeev Koppal

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

Publications

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

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

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