Brevin Tilmon

Homepage: https://btilmon.github.io
Email: btilmon@ufl.edu

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

Experience

Meta — 2021
Research Intern, Reality Labs
Developed an efficient machine learning depth estimation algorithm for augmented and virtual reality systems. Scaled the algorithm into production machine learning infrastructure.

NASA — 2021
Research Intern, Intelligent Robotics Group
Developed a simulator and computer vision algorithms for a computational imaging sensor to estimate the geometry and reflectance of planetary surfaces. [link]

University of Florida — 2019 - Present
Graduate Research Assistant, FOCUS Lab
Built differentiable computational imaging sensors, both optics and algorithms, that quickly and selectively sense the environment to enable efficient computer vision applications such as depth estimation and eye tracking. Focused on geometric computer vision, machine learning, optics, GPU and systems programming.

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

- C++, Python, PyTorch/LibTorch, CUDA, NVIDIA OptiX, Mitsuba
- Depth/RGB Cameras, Embedded Systems, Optics Bench