

Brevin Tilmon

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Education

University of Florida, Gainesville, FL
Ph.D. Electrical and Computer Engineering
Advisor: Sanjeev Koppal

5/2019 - 5/2023 (expected)

Murray State University, Murray, KY
B.S. Engineering Physics

8/2015 - 5/2019

Experience

Meta, Seattle, WA

8/2021 - 12/2021

Research Intern, Reality Labs, Mentors: Shuochen Su and Michael Hall

Developed depth estimation algorithm for efficient dynamic occlusion on augmented and virtual reality devices. Shipped algorithm into production machine learning infrastructure. Filed patent based on results.

National Aeronautics and Space Administration (NASA), Mountain View, CA

5/2021 - 8/2021

Research Intern, Intelligent Robotics Group, Mentors: Michael Dille and Uland Wong

Developed a simulator and 3D reconstruction algorithms for a computational imaging device. Improved 3D reconstruction capabilities of the computational imaging device compared to original algorithms. Released public dataset from the simulator for computational imaging research.

University of Florida, Gainesville, FL

5/2019 - Present

Graduate Research Assistant, FOCUS Lab, Advisor: Sanjeev Koppal

Developed adaptive computational imaging devices to improve computer vision algorithm performance. Developed computer vision and machine learning algorithms including calibration, depth estimation, structured light, 3D reconstruction and unsupervised learning. Developed fast software for computational imaging devices including optimizing computer vision algorithms, porting machine learning models to micro-controllers, and synchronizing hardware within devices for real time demonstrations.

Publications

SaccadeCam: Adaptive Visual Attention for Monocular Depth Sensing

B. Tilmon and S. J. Koppal

International Conference on Computer Vision (ICCV), 2021

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

FoveaCam: A MEMS Mirror-Enabled Foveating Camera

B. Tilmon, E. Jain, S. Ferrari and S. J. Koppal.

International Conference on Computational Photography (ICCP), 2020

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

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

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

Patents

Efficient Dynamic Occlusion based on Stereo Vision

B. Tilmon, S. Su, M. Hall
under review, 2022

Fast Foveation Camera and Controlling Algorithms

S. J. Koppal, Z. Tasneem, D. Wang, H. Xie, B. Tilmon
US16844597, 2020

Awards

National Science Foundation Graduate Research Fellowship - Honorable Mention	2021
Graduate School Preeminence Award, University of Florida Fellowship for top PhD applications.	2019 - 2024
Jesse & Deborah Jones Endowment Scholarship, Murray State University Merit scholarship covered housing and partial tuition.	2015 - 2019