

# Brevin Tilmon

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## Education

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### University of Florida

5/2019 - 5/2023 (expected)

Ph.D. Electrical and Computer Engineering

Advisor: Sanjeev Koppal

### Murray State University

8/2015 - 5/2019

B.S. Engineering Physics

## Experience

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### Snap Inc.

5/2022 - Present

#### Research Intern, Computational Imaging Group

Supervisors: Jian Wang and Shree Nayar

Working on computational imaging for mobile devices.

### Meta

8/2021 - 12/2021

#### Research Intern, Reality Labs

Supervisors: 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.

### NASA Ames Research Center

5/2021 - 8/2021

#### Research Intern, Intelligent Robotics Group

Supervisors: 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

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.

## Publications

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### 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**

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### **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**

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### **National Science Foundation Graduate Research Fellowship Honorable Mention**

2021

### **Graduate School Preeminence Award, University of Florida**

2019 - 2024

Selective fellowship for competitive PhD applicants.

### **Jesse & Deborah Jones Endowment Scholarship, Murray State University**

2015 - 2019

Merit scholarship covered housing and partial tuition.