

# Brevin Tilmon

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## RESEARCH STATEMENT

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I am interested in computational photography, computer vision, and machine learning. My research develops computational cameras for active sensing.

## EDUCATION

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**University of Florida** 2019.8 - Present

PhD Student, Electrical and Computer Engineering Department

Advisor: Prof. Sanjeev Koppal

**Murray State University** 2015.8 - 2019.5

Bachelor of Science, Engineering Physics, GPA: 3.8/4.0

## PUBLICATIONS

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1. **Brevin Tilmon**, Eakta Jain, Silvia Ferrari, Sanjeev Koppal. **FoveaCam: A MEMS Mirror-Enabled Foveating Camera**. *International Conference on Computational Photography* 2020.
2. Francesco Pittaluga, Zaid Tasneem, Justin Folden, **Brevin Tilmon**, Ayan Chakrabarti, Sanjeev Koppal. **A MEMS-Based Foveating LIDAR to Enable Real-Time Adaptive Depth Sensing**. *arXiv* 2020.
3. Kristofer Henderson, Xiaomeng Liu, Justin Folden, **Brevin Tilmon**, Suren Jayasuriya, Sanjeev Koppal. **Design and Calibration of a Fast Flying-Dot Projector for Dynamic Light Transport Acquisition**. *IEEE Transactions on Computational Imaging* 2020.
4. Gheorge Bunget, **Brevin Tilmon**, Andrew Yee, Dylan Stewart, James Rogers, et al. **Novel Approach of Wavelet Analysis for Nonlinear Ultrasonic Measurements and Fatigue Assessment of Jet Engine Components**. *American Institute of Physics* 2018.

## EXPERIENCE

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**University of Florida** 2019.8 - Present

**FOCUS Lab**

Research Assistant, Advisor: Prof. Sanjeev Koppal

**Project 1: Foveating Cameras** (Publication 1)

- Built FoveaCam, a camera equipped with a MEMS mirror in-camera to instantly modulate field of view.
- Developed control algorithms to optimally modulate FoveaCam field of view to increase computer vision performance at decreased pixel throughput.

**University of Florida** 2018.5 - 2018.8

**FOCUS Lab**

Undergraduate Research Intern (SURF Program), Advisor: Prof. Sanjeev Koppal

- Developed a projector-camera system for active light transport imaging. See publication 3.

**Murray State University** 2016.11 - 2019.5

**IEEE Robotics Team**

President

- Led the design and implementation of fully autonomous robots for competition at the IEEE SoutheastCon hardware competitions. Organized outreach activities for under represented students at surrounding high schools in STEM. Contributed to NASA grants awarded to fund our team.

## AWARDS

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| <b>NSF GRFP Honorable Mention</b>                                      | 2020      |
| <b>Graduate School Preeminence Award</b> , University of Florida       | 2019-2024 |
| <b>Kirkland Fellowship</b> , University of Florida                     | 2019-2021 |
| <b>Jesse &amp; Deborah Jones Scholarship</b> , Murray State University | 2015-2019 |
| <b>Housing Scholarship</b> , Murray State University                   | 2015-2018 |

## SKILLS

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**Programming:** C/C++, Python, MATLAB

**Sensors and Robotics:** Machine vision and depth cameras, Embedded Systems, Optics Bench