Brevin Tilmon

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

Interests

Computer Vision (3D computer vision), Computational Photography (efficient cameras, projectors, LIDAR systems, image enhancement), Machine Learning (unsupervised learning, lightweight models for computer vision in the wild)

Education

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

Snap Inc. 5/2022 - Present
Research Intern, Computational Imaging Team
Supervisors: Sizhuo Ma and Jian Wang
Project: Low power depth estimation on mobile devices

Meta 8/2021 - 12/2021
Research Intern, Reality Labs
Supervisors: Shuochen Su and Michael Hall
Project: Dynamic occlusion based on stereo depth estimation

NASA Ames Research Center 5/2021 - 8/2021
Research Intern, Intelligent Robotics Group
Supervisors: Michael Dille and Uland Wong
Project: 3D reconstruction and neural rendering

University of Florida 5/2019 - Present
Graduate Research Assistant, FOCUS Lab
Advisor: Sanjeev Koppal
Projects: Computer vision algorithms and efficient cameras, projectors, and LIDAR systems

Publications

SaccadeCam: Adaptive Visual Attention for Monocular Depth Sensing
B. Tilmon and S. J. Koppal
IEEE/CVF International Conference on Computer Vision (ICCV), 2021

Fast Foveating Cameras for Dense Adaptive Resolution
B. Tilmon, E. Jain, S. Ferrari and S. J. Koppal
IEEE 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.
IEEE 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.
IEEE Transactions on Computational Imaging 2020

Open Source Software

illumiGrad [link]
PyTorch-abstracted camera calibration for RGBD cameras.

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 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.