TZOFI KLINGHOFFER

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EDUCATION

PhD Candidate **Sept. 2021 – Present**
Massachusetts Institute of Technology, Media Lab, Cambridge, MA
Topics: Computer Vision, Imaging, Graphics
Advisor: Ramesh Raskar

Bachelor of Science in Computer Science, *summa cum laude (GPA: 3.97 / 4.00)* **2018**
The University of Alabama, College of Engineering, Tuscaloosa AL
Minors: Chinese; Social Innovation and Leadership; Certificate in Global Studies

FULL-TIME EXPERIENCE

Amazon **Aug. 2020 – Sept. 2021**
Software Development Engineer II, Alexa AI *Cambridge, MA*

- Led design and implementation of software for automated generation of training and test datasets

MIT Lincoln Laboratory **May 2018 – Aug. 2020**
Associate Tech Staff, Homeland Protection Group (Clearance: Secret) *Lexington, MA*

- Developed machine learning and computer vision methods for national security mission areas
- In collaboration with MIT CSAIL, led computer vision research on segmentation/classification of pathologies in medical images, including x-ray and microscopy, resulting in 3 publications
- Contributed to development and deployment of real-time software systems that improved anomaly detection for critical areas of homeland security by over 600%

INTERN EXPERIENCE

Meta Reality Labs **May 2023 – Sept. 2023**
AI Research Scientist Intern: 3D vision for extended reality *Cambridge, MA*

NVIDIA Research **May 2022 – Jan. 2023**
Research Intern: Neural rendering for autonomous vehicle perception *Remote*

MIT Sea Grant Program **May – Aug. 2017**
Research Intern: Object detection for NOAA fisheries management *Cambridge, MA*

Lockheed Martin Corporation **May – Aug. 2016**
Space Systems: Software Engineering Intern: Software optimization for Orion mission *Littleton, CO*

Jacobs Technology **June – Aug. 2014; May – Aug. 2015**
Software Development & Test Intern: Created automated testing for U.S. Air Force system *Nashua, NH*

SELECTED PAPERS AND PRESENTATIONS

T. Klinghoffer*, K*. Tiwary, N. Behari, B. Agrawalla, R. Raskar, "DISeR: Designing Imaging Systems with Reinforcement Learning." In Submission, 2023. **[* Equal contribution]**

T. Klinghoffer, J. Philion, W. Chen, O. Litany, Z. Gojcic, J. Joo , R. Raskar, S. Fidler, J. Alvarez, "Towards Viewpoint Robustness in Bird's Eye View Segmentation." In Submission, 2023.

K. Tiwary, A. Dave, N. Behari, **T. Klinghoffer**, A. Veeraraghavan, R. Raskar, "ORCA: Glossy Objects as Radiance Field Cameras." In Proceedings of IEEE Conference on Computer Vision and Pattern Recognition, 2023.

T. Klinghoffer*, K. Tiwary*, R. Raskar, "Towards learning neural representations from shadows." In Proceedings of Proceedings of The European Conference on Computer Vision, 2022. **[* Equal contribution]**

T. Klinghoffer*, K. Tiwary*, A. Balata, V. Sharma, R. Raskar, "Physically Disentangled Representations." Presented at The European Conference on Computer Vision Workshops, 2022. **[* Equal contribution]**

T. Klinghoffer*, S. Somasundaram*, K. Tiwary*, R. Raskar, "Physics vs. Learned Priors: Rethinking Camera and Algorithm Design for Task-Specific Imaging." In Proceedings of IEEE International Conference on Computational Photography (ICCP), 2022. **[* Equal contribution]**

L. Gjesteby, **T. Klinghoffer**, M. Ash, M. Melton, K. Otto, D. Lamb, S. Burke, L Brattain, "Annotation-Efficient 3D U-Nets for Brain Plasticity Network Mapping," In Proceedings of IEEE International Symposium on Biomedical Imaging, 2021.

T. Klinghoffer, P. Morales, Y.G. Park, N. Evans, K. Cheung, L. Brattain, "Self-Supervised Feature Extraction for 3D Axon Segmentation," In Proceedings of the IEEE Conference on Computer Vision and Pattern Recognition Workshops, 2020.

T. Klinghoffer, D. Chavez, L. Brattain, "Volumetric Segmentation for Dense Axon Tracing," presented at Recent Advances in Artificial Intelligence for National Security (RAAINS), MA, 2019.

P. Morales*, **T. Klinghoffer***, and S. J. Lee, "Feature Forwarding for Efficient Single Image Dehazing," In Proceedings of the IEEE Conference on Computer Vision and Pattern Recognition Workshops, 2019. **[* Equal contribution]**

C. Ancuti, et al., "NTIRE 2019 Image Dehazing Challenge Report," In Proceedings of the IEEE Conference on Computer Vision and Pattern Recognition Workshops, 2019.

T. Klinghoffer, C. Perez, R. Vincent, P. Perdikaris, and C. Chryssostomidis, "Applying Image Recognition to Enhance Fisheries Management Capabilities," presented at American Meteorological Society's 17th Conference on Artificial and Computational Intelligence and its Applications to the Environmental Sciences, Austin, TX, 2018. **[Student Research Award]**

TECHNICAL KNOWLEDGE

Primary: Python, PyTorch, C, Keras, Tensorflow, GIT, SQL, MongoDB, Elastic, Linux, Windows
Secondary: Java, C++, Visual Basic, HTML, DXL, DOORS, .NET, Perforce, VMWare

TEACHING EXPERIENCE

The University of Alabama Honors College (Instructor) **Jan. – May 2018**

- Designed & taught Programming for Non-Programmers course (Python, HTML, Deep Learning, etc.)

GRANTS

Advanced Concepts Committee (MIT Lincoln Laboratory) – $210k **Oct. 2019 – Sept 2020**

LEADERSHIP AND SERVICE

FIRST LEGO League Coach **Sept. 2019 – Present**
MIT RACECAR Robotics & Python Course Instructor **Sept. 2019 – Present**

HONORS AND AWARDS

[1] 2023 Qualcomm Innovation Fellowship Finalist, **[2]** 2023 NSF GRFP Honorable Mention, **[3]** 2018 Student Research Award - American Meteorological Society (AMS), **[4]** 2016 National Oceanic and Atmospheric Administration (NOAA) Hollings Scholar