# TZOFI KLINGHOFFER

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## EDUCATION

**Master of Science Candidate, PhD Track** ***(GPA: 5.0 / 5.0)*** **Sept. 2021 – Present**
Massachusetts Institute of Technology, Media Lab, Cambridge, MA
Topics: Machine Learning, Computer Vision, Graphics
Advisor: Prof 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* *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

**NVIDIA Research** **May 2021 – Present**
*Research Intern*: Neural radiance fields for autonomous vehicle perception *Cambridge, MA*

**MIT Sea Grant Program** **May – Aug. 2017**
*Research Intern* *Cambridge, MA*

- Applied computer vision to automate fishery stock assessments (93% fish detection accuracy obtained)
- Presented findings at the 2017 NOAA Science and Education Symposium, Silver Spring, MD

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

- Restructured memory and sorting algorithms to decrease run time of data extraction tool (VBA)

**Jacobs Technology** **June – Aug. 2014; May – Aug. 2015**
*Software Development & Test Intern* *Nashua, NH*

- Upgraded internal and user-end automated testing of U.S. Air Force airdrop software (VB .NET)
- Expanded code functionality to perform with multiple aircrafts and payloads (C#)

## PAPERS AND PRESENTATIONS

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

**T Klinghoffer***, K Tiwary*, A. Balata, V. Sharma, R. Raskar, "Physically Disentangled Representations." Accepted for Presentation 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

2020 MIT Lincoln Scholar Fellowship Awardee (Declined), 2019 D.o.D. SMART Fellowship Awardee (Declined), 2016 National Oceanic and Atmospheric Administration (NOAA) Hollings Scholar

## CLEARANCES

Secret Clearance