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[Google Scholar](#) (Current citation=723, H-index=10)

EDUCATION

California Institute of Technology , Pasadena, US	09/2020-Present
<i>Ph.D., Medical and Electrical Engineering. GPA: 4.1</i>	
University of California, Los Angeles , Los Angeles, US	09/2018-06/2020
<i>M.S., Electrical and Computer Engineering. GPA: 3.867</i>	
Huazhong University of Science and Technology , Wuhan, China	09/2014-06/2018
<i>B.S., Biomedical Engineering. GPA: 3.98</i>	

RESEARCH INTERESTS

- Photoacoustic imaging, including photoacoustic microscopy and photoacoustic computer tomography
- Numerical modeling of ultrasound propagation through human skull and inverse methods
- Deep learning algorithms for improving microscopy images

PUBLICATIONS (* for co-first author)

Journal Publications

1. **Luo, Y.**, Huang, H., Sastry, K., Hu, P., Tong, X., Kuo, J., Na, S., Villa, U., Anastasio, M. A., Wang, L. V., Full-wave image reconstruction in transcranial photoacoustic computed tomography using a multiphysics finite element method. *IEEE Transactions on Medical Imaging*, under review (2024).
2. Tong, X.*, Liu, C. Z.*, **Luo, Y.***, Lin, L*, Dzubnar, J., Invernizzi, M., Zhang, Y., Cao, R., Hu, P., Torres, J., Kasabian, A., Lai, L., Yee, L., Wang, L. V., Enhancing breast lesion screening and diagnosis by panoramic photoacoustic computed tomography with learning-based classification. *Nature Biomedical Engineering*, under review (2024).
3. Zhang, Y., Na, S., Russin, J. J., Lin, L., **Luo, Y.**, An, Y., Hu, P., Sastry, K., Maslov, K., Liu, C. Y., Wang, L. V., Rotational ultrasound and photoacoustic tomography of the human body. *Nature Biomedical Engineering*, under review (2024).
4. Aborahama*, Y., Sastry, K.*, Cui, M.*, Zhang, Y., **Luo, Y.**, Cao, R., Ku, G., Wang, L.V., De-aberration for noninvasive transcranial photoacoustic computed tomography through an adult human skull. *Nature Machine Intelligence*, under review (2024).
5. Sastry, K.*, Aborahama, Y.*, **Luo, Y.**, Zhang, Y., Cui, M., Cao, R., Wang, L. V., Transcranial photoacoustic tomography de-aberrated using boundary elements. *IEEE Transactions on Medical Imaging*, under review (2024).
6. Cao, R.*, **Luo, Y.**, Zhao, J., Zeng, Y., Zhang, Y., Zhou, Zerda, A., Wang, L. V., Optical-resolution parallel ultraviolet photoacoustic microscopy for slide-free histology. *Science Advances*, in press (2024).
7. Cao, R.*, **Luo, Y.***, Xu, J., Luo, X., Geng, K., Aborahama, Y., Cui, M., Davis, S., Na, S., Tong, X., Liu, C., Sastry, K., Maslov, K., Hu, P., Zhang, Y., Lin, L., Zhang, Y., Wang, L. V., Single-shot 3D photoacoustic computed tomography with a densely packed array for transcranial functional imaging. *arXiv* preprint (2023).
8. Sastry, K., Zhang, Y., Hu, P., **Luo, Y.**, Tong, X., Na, S., Wang, L. V., A method for the geometric calibration of ultrasound transducer arrays with arbitrary geometries. *Photoacoustics* (2023).
9. Cao, R., Nelson, S. D., Davis, S., Liang, Y., **Luo, Y.**, Zhang, Y., Crawford, B., Wang, L. V., Label-free intraoperative histology of bone tissue via deep-learning-assisted ultraviolet photoacoustic microscopy. *Nature Biomedical Engineering* (2023).
10. Cao, R., Zhao, J., Li, L., Du, L., Zhang, Y., **Luo, Y.**, Jiang, L., Davis, S., Zhou, Q., Zerda, A., Wang, L. V., Optical-resolution photoacoustic microscopy with a needle-shaped beam. *Nature Photonics* (2023).
11. Zhang, Y., Liu, T., Singh, M., Çetintaş, E., **Luo, Y.**, Rivenson, Y., Larin, K. V., Ozcan, A., Neural network-based image reconstruction in swept-source optical coherence tomography using undersampled spectral data. *Light: Science & Applications* (2021).
12. Yang, X., Huang, L., **Luo, Y.**, Wu, Y., Wang, H., Rivenson, Y., Ozcan, A., Deep-learning-based virtual

- refocusing of images using an engineered point-spread function. *ACS Photonics* (2021).
13. Huang, L., Chen, H., Luo, Y., Rivenson, Y., Ozcan, A., Recurrent neural network-based volumetric fluorescence microscopy. *Light: Science & Applications* (2021).
 14. Luo, Y.*, Huang, L.*, Rivenson, Y., & Ozcan, A., Single-shot autofocusing of microscopy images using deep learning. *ACS Photonics* (2021).
 15. Wu, Y., Rivenson, Y., Wang, H., Luo, Y., Ben-David, E., Bentolila, L. A., Pritz, C., Ozcan, A., Three-dimensional virtual refocusing of fluorescence microscopy images using deep learning. *Nature methods* (2019).
 16. Wu, Y., Luo, Y.*, Chaudhari, G., Rivenson, Y., Calis, A., de Haan, K., Ozcan, A., Bright-field holography: cross-modality deep learning enables snapshot 3D imaging with bright-field contrast using a single hologram. *Light: Science & Applications* (2019).
 17. Zhang, Y., Ceylan Koydemir, H., Shimogawa, M. M., Yalcin, S., Guziak, A., Liu, T., Oguz, I., Huang, Y., Bai, B., Luo, Y., Luo, Y., Wei, Z., Wang, H., Bianco, V., Zhang, B., Nadkarni, R., Hill, K., Ozcan, A., Motility-based label-free detection of parasites in bodily fluids using holographic speckle analysis and deep learning. *Light: Science & Applications* (2018).
 18. Luo, Y.*, Wang, A.*, Liu, M., Lei, T., Zhang, X., Gao, Z., Jiang, H., Gong, H., Yuan, J., Label-free brainwide visualization of senile plaque using cryo-micro-optical sectioning tomography. *Optics Letters* (2017).

Patents

1. Ozcan, A., Rivenson, Y., Luo, Y., & Huang, L., Single-shot autofocusing of microscopy images using deep learning. U.S. Patent Application No. 17/908,864 (2023).
2. Ozcan, A., Rivenson, Y., Wang, H., Luo, Y., De Haan, K., Zhang, Y., & Bai, B., Method and system for digital staining of microscopy images using deep learning. U.S. Patent Application No. 17/783,260 (2023).

Conference Presentations

1. Cao, R., Zhao, J., Li, L., Du, L., Zhang, Y., Luo, Y., Jiang, L., Davis, S., Zhou, Q., Zerda, A., Wang, L. (2023, March). Needle-shaped beam optical-resolution photoacoustic microscopy with an extended depth of field (Conference Presentation). In *Photons Plus Ultrasound: Imaging and Sensing 2023* (p. PC123790G). **SPIE**.
2. Yang, X., Huang, L., Luo, Y., Wu, Y., Wang, H., Rivenson, Y., Ozcan, A. (2022, May). 3D Virtual Refocusing of Point Spread Function (PSF) Engineered Images Using Cascaded Neural Networks. In *CLEO: Science and Innovations* (pp. STh5J-5). Optica Publishing Group.
3. Zhang, Y., Liu, T., Singh, M., Çetintaş, E., Luo, Y., Rivenson, Y., Larin, K. V., Ozcan, A. (2022, May). Deep learning-based image reconstruction in optical coherence tomography using undersampled spectral data. In *2022 Conference on Lasers and Electro-Optics (CLEO)* (pp. 1-2). IEEE.
4. Yang, X., Huang, L., Luo, Y., Wu, Y., Wang, H., Rivenson, Y., Ozcan, A. (2022, March). Three-dimensional virtual refocusing of point-spread function engineered images using cascaded neural networks. In *AI and Optical Data Sciences III* (p. PC1201906). **SPIE**.
5. Zhang, Y., Liu, T., Singh, M., Çetintaş, E., Luo, Y., Rivenson, Y., Larin, K. V., Ozcan, A. (2022, March). Deep learning-based image reconstruction in swept-source optical coherence tomography using undersampled spectral data. In *Multimodal Biomedical Imaging XVII* (p. PC119520D). **SPIE**.
6. Xilin, Y., Huang, L., Luo, Y., Wu, Y., Wang, H., Rivenson, Y., Ozcan, A. (2021, August). Virtual refocusing of fluorescence images using an engineered point-spread function and deep learning. In *Emerging Topics in Artificial Intelligence (ETAI) 2021* (Vol. 11804, p. 1180425). **SPIE**.
7. Huang, L., Chen, H., Luo, Y., Rivenson, Y., Ozcan, A. (2021, August). Convolutional recurrent neural network-enabled volumetric fluorescence imaging. In *Emerging Topics in Artificial Intelligence (ETAI) 2021* (Vol. 11804, p. 1180411). **SPIE**.
8. Huang, L., Luo, Y., Rivenson, Y., Ozcan, A. (2021, May). Neural network-based single-shot autofocusing of microscopy images. In *CLEO: Applications and Technology* (pp. ATu4L-2). Optica Publishing Group.
9. Huang, L., Luo, Y., Rivenson, Y., Ozcan, A. (2021, May). Volumetric fluorescence microscopy using convolutional recurrent neural networks. In *2021 Conference on Lasers and Electro-Optics (CLEO)* (pp. 1-

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- 2). IEEE.
10. Huang, L., **Luo, Y.**, Rivenson, Y., Ozcan, A. (2021, March). Deep learning-based single-shot autofocusing of microscopy images. In *Imaging, Manipulation, and Analysis of Biomolecules, Cells, and Tissues XIX* (Vol. 11647, p. 116470Y). **SPIE**.
 11. Huang, L., **Luo, Y.**, Rivenson, Y., Ozcan, A. (2021, March). Deep-learning-based volumetric imaging in fluorescence microscopy. In *Three-Dimensional and Multidimensional Microscopy: Image Acquisition and Processing XXVIII* (Vol. 11649, p. 116490G). **SPIE**.
 12. Wu, Y., **Luo, Y.**, Chaudhari, G., Rivenson, Y., De Haan, K., Calis, A., Ozcan, A. (2020, August). 3D reconstruction of a hologram with brightfield contrast using deep learning. In *Emerging Topics in Artificial Intelligence 2020* (Vol. 11469, p. 1146919). **SPIE**.
 13. Wu, Y., Rivenson, Y., Wang, H., **Luo, Y.**, Ben-David, E., Bentolila, L. A., Pritz, C., Ozcan, A. (2020, May). Deep-z: 3D virtual refocusing of fluorescence images using deep learning. In *CLEO: Applications and Technology* (pp. AW3T-6). Optica Publishing Group.
 14. Wu, Y., **Luo, Y.**, Chaudhari, G., Rivenson, Y., Calis, A., de Haan, K., Ozcan, A. (2020, March). Cross-modality deep learning brings bright-field image contrast to digital holographic microscopy (Conference Presentation). In *Quantitative Phase Imaging VI* (Vol. 11249, p. 112490R). **SPIE**.
 15. Wang, H., Koydemir, H. C., Qiu, Y., Bai, B., Zhang, Y., Jin, Y., Tok, S., Yilmaz, E.C., Gumustekin, E., **Luo, Y.**, Rivenson, Y., Ozcan, A. (2020, March). Deep learning enables high-throughput early detection and classification of bacterial colonies using time-lapse coherent imaging (Conference Presentation). In *Optics and Biophotonics in Low-Resource Settings VI* (Vol. 11230, p. 112300E). **SPIE**.
 16. Wu, Y., Rivenson, Y., Wang, H., **Luo, Y.**, Ben-David, E., Bentolila, L. A., Pritz, C. Ozcan, A. (2020, March). Deep-learning based three-dimensional virtual refocusing of fluorescence microscopy images (Conference Presentation). In *Three-Dimensional and Multidimensional Microscopy: Image Acquisition and Processing XXVII* (Vol. 11245, p. 112450P). **SPIE**.
 17. **Luo, Y.**, Wu, Y., Chaudhari, G., Rivenson, Y., Calis, A., De Haan, K., Ozcan, A. (2019, May). Holographic Reconstruction with Bright-field Microscopy Contrast using Cross-Modality Deep Learning. In *CLEO: Applications and Technology* (pp. AM2I-3). Optica Publishing Group.
 18. Zhang, Y., Koydemir, H. C., Shimogawa, M. M., Yalcin, S., Guziak, A., Liu, T., Oguz, I., Huang, Y., Bai, B., **Luo, Y.**, Luo, Y., Wei, Z., Wang, H., Bianco, V., Zhang, B., Nadkarni, R., Hill, K., Ozcan, A. (2019, May). High-Throughput and Label-Free Detection of Motile Parasites in Bodily Fluids Using Lensless Time-Resolved Speckle Imaging. In *CLEO: Applications and Technology* (pp. ATu4K-2). Optica Publishing Group.
 19. **Luo, Y.**, Wang, A., Liu, M., Lei, T., Zhang, X., Gao, Z., Liang, H., Gong, H., Yuan, J. (2018, March). Cryo-micro-optical sectioning tomography for label-free brainwide visualization of senile plaque (Conference Presentation). In *Neural Imaging and Sensing 2018* (Vol. 10481, p. 104810M). **SPIE**.

HONOR & AWARDS

- UCLA 2018 Photonics Scholarship – Multi-year Research Award
- Caltech 2020 Pyott fellowship in Medical Engineering

REVIEWER SERVICES

OSA: Optics Letters (2), Biomedical Optics Express (5)
OPTICA: Journal of the Optical Society of America A (1)
IEEE: IEEE Transactions on Medical Imaging (5), IEEE Transactions on Biomedical Engineering (1)
Wiley: Journal of Applied Clinical Medical Physics (3)
PLOS: PLOS Computational Biology (1)