Zhaoqiang Wang

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Education

University of California, Los Angeles Present
Ph.D. Candidate in Bioengineering
Supervisor: Dr. Liang Gao

University of California, Los Angeles December 2019
M.S. in Bioengineering GPA: 3.943/4
Supervisor: Dr. Tzung K. Hsiai

Huazhong University of Science and Technology, China June 2018
B.E in Optoelectronic Information Science and Engineering Rank: 1st/261, GPA: 3.93/4
Supervisor: Dr. Peng Fei

Research Experience

UCLA Intelligent Optics Laboratory Los Angeles, CA
Graduate Research Assistant September 2021 - Present
Advisor: Dr. Liang Gao

- Developed scanning light sheet illuminated light field tomography (LIFT) microscope for optical mapping in a beating embryonic zebrafish heart
- Developed spectrum-encoding light field tomography for high contrast ultrafast imaging

UCLA Cardiovascular Engineering Research Laboratory Los Angeles, CA
Graduate Research Assistant September 2018 – September 2021
Advisors: Dr. Tzung K. Hsiai, Dr. Peng Fei

- Integrated light sheet and light field microscopy to quantify 3D biomechanics inside a beating embryonic zebrafish heart

HUST Biophotonics and Microfluidics Laboratory Wuhan, China
Undergraduate Research Assistant December 2017 - September 2018
Advisor: Dr. Peng Fei

- Developed deep learning based reconstruction algorithm for light field microscopy
- Developed modularized illumination plugin to transform a commercial epi-fluorescent microscopy into light sheet fluorescent microscopy

Publications and Conferences

- **Wang, Z.**, Zhu, L., Zhang, H. et al. Real-time volumetric reconstruction of biological dynamics with light-field microscopy and deep learning. **Nat Methods** 18, 551–556 (2021).
  Media: UCLA Researchers Use AI to Show Multidimensional Imaging of Biological Processes
  New developments of the biodynamic optical imaging research by Fei Peng-led Research Group
- **Wang Z,** Ding Y, Satta S, Roustaei M, Fei P, et al. A hybrid of light-field and light-sheet imaging to study myocardial function and intracardiac blood flow during zebrafish development. **PLOS Computational Biology** 17(7): e1009175. (2021)
- Roustaei, M., Baek, K.I., **Wang, Z.**, Cavallero, S., Satta, S., Lai, A., O'Donnell, R., Vedula, V., Ding, Y., Marsden, A.L. and Hsiai, T., Computational simulations of the 4D micro-circulatory network in zebrafish tail amputation and regeneration, **J. R. Soc. Interface**.192021089820210898
- Ding Y., Gudapati V., Lin R., Fei Y., Packard RRS., Song S., Chang CC., Baek KI., **Wang Z.**, Roustaei M., Kuang D., Kuo J., Hsiai TK. Saak Transform-Based Machine Learning for Light-Sheet Imaging of Cardiac Trabeculation. **IEEE Trans Biomed Eng**. 2020
- Li G., **Wang Z.**, Zhang H., Zhu L., Fei P., Deep-learning light-field microscopy with improved resolution and reconstruction speed (Selected Post-deadline Submission Presentation). **Biophotonics**

Congress: Biomedical Optics 2020, OSA

- Xie, X., Yang, Y., Yao, Y., **Wang, Z.**, Zhu, D., & Fei, P. Low-cost and high-performance 3D light-sheet fluorescence imaging on pre-owned conventional microscopes (Oral Presentation). **Proc. SPIE** 10493, Dynamics and Fluctuations in Biomedical Photonics XV, 2018

Selected Honors

- China National Scholarship (Highest scholarship given by Chinese government) 2015, 2016, 2017
- Merit Student Scholarship, HUST, Wuhan, China 2015, 2016, 2017
- Excellent Student Scholarship, Qiming College, HUST, Wuhan, China 2016
- Goodix Technology Scholarship, Goodix Technology, Shenzhen, China 2018

Tech Skills

- **Programming**: C++, Python, Matlab, Labview
- **Others**: PyTorch, Keras, OpticStudio (zemax), Amira, Imaris, SolidWorks