

# Stanford

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## YoungJu Jo

Ph.D. Student in Applied Physics, admitted Autumn 2018

### Bio

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#### HONORS AND AWARDS

- Agarwal Award, KAIST (2022)
- Bio-X Bowes Fellowship, Stanford University (2020)
- Asan Foundation Biomedical Science Scholarship, Asan Foundation (2018)
- KAIST Creativity and Challenge Award, KAIST (2018)
- Samsung HumanTech Paper Award (Silver), Samsung Electronics (2017)
- Talent Award of Korea, Republic of Korea Government (2015)
- SPIE Optics and Photonics Education Scholarship, SPIE (2014)
- KAIST Presidential Fellowship, KAIST (2013)

#### EDUCATION AND CERTIFICATIONS

- M.S., Stanford University , Biology (2020)
- B.S., KAIST , Physics and Mathematics (2018)

#### LINKS

- Personal Website: <https://sites.google.com/view/youngjujo>

### Publications

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#### PUBLICATIONS

- **Cell-type-specific population dynamics of diverse reward computations.** *Cell*  
Sylwestrak, E. L., Jo, Y., Vesuna, S., Wang, X., Holcomb, B., Tien, R. H., Kim, D. K., Fenno, L., Ramakrishnan, C., Allen, W. E., Chen, R., Shenoy, K. V., Sussillo, et al  
2022; 185 (19): 3568
- **Label-free multiplexed microtomography of endogenous subcellular dynamics using generalizable deep learning.** *Nature cell biology*  
Jo, Y., Cho, H., Park, W. S., Kim, G., Ryu, D., Kim, Y. S., Lee, M., Park, S., Lee, M. J., Joo, H., Jo, H., Lee, S., Lee, et al  
2021
- **Holographic deep learning for rapid optical screening of anthrax spores** *SCIENCE ADVANCES*  
Jo, Y., Park, S., Jung, J., Yoon, J., Joo, H., Kim, M., Kang, S., Choi, M., Lee, S., Park, Y.  
2017; 3 (8): e1700606
- **Cardiogenic control of affective behavioural state.** *Nature*  
Hsueh, B., Chen, R., Jo, Y., Tang, D., Raffiee, M., Kim, Y. S., Inoue, M., Randles, S., Ramakrishnan, C., Patel, S., Kim, D. K., Liu, T. X., Kim, et al

2023

- **Rapid species identification of pathogenic bacteria from a minute quantity exploiting three-dimensional quantitative phase imaging and artificial neural network.** *Light, science & applications*  
Kim, G., Ahn, D., Kang, M., Park, J., Ryu, D., Jo, Y., Song, J., Ryu, J. S., Choi, G., Chung, H. J., Kim, K., Chung, D. R., Yoo, et al  
2022; 11 (1): 190
- **Mechanogenetic role of actomyosin complex in branching morphogenesis of epithelial organs.** *Development (Cambridge, England)*  
Kim, J. M., Jo, Y. n., Jung, J. W., Park, K. n.  
2021
- **Deep-learning based three-dimensional label-free tracking and analysis of immunological synapses of CAR-T cells.** *eLife*  
Lee, M., Lee, Y. H., Song, J., Kim, G., Jo, Y., Min, H., Kim, C. H., Park, Y.  
2020; 9
- **Calibration-free quantitative phase imaging using data-driven aberration modeling** *OPTICS EXPRESS*  
Chang, T., Ryu, D., Jo, Y., Choi, G., Min, H., Park, Y.  
2020; 28 (23): 34835–47
- **Label-Free Tomographic Imaging of Lipid Droplets in Foam Cells for Machine-Learning-Assisted Therapeutic Evaluation of Targeted Nanodrugs.** *ACS nano*  
Park, S., Ahn, J. W., Jo, Y., Kang, H. Y., Kim, H. J., Cheon, Y., Kim, J. W., Park, Y., Lee, S., Park, K.  
2020
- **Optogenetic activation of intracellular antibodies for direct modulation of endogenous proteins.** *Nature methods*  
Yu, D., Lee, H., Hong, J., Jung, H., Jo, Y., Oh, B., Park, B. O., Do Heo, W.  
2019
- **Cycle-consistent deep learning approach to coherent noise reduction in optical diffraction tomography** *OPTICS EXPRESS*  
Choi, G., Ryu, D., Jo, Y., Kim, Y., Park, W., Min, H., Park, Y.  
2019; 27 (4): 4927–43
- **Intensimetric biosensors visualize the activity of multiple small GTPases in vivo** *NATURE COMMUNICATIONS*  
Kim, J., Lee, S., Jung, K., Oh, W., Kim, N., Son, S., Jo, Y., Kwon, H., Heo, W.  
2019; 10: 211
- **Learning-based screening of hematologic disorders using quantitative phase imaging of individual red blood cells** *BIOSENSORS & BIOELECTRONICS*  
Kim, G., Jo, Y., Cho, H., Min, H., Park, Y.  
2019; 123: 69–76
- **Deep learning-based optical field screening for robust optical diffraction tomography.** *Scientific reports*  
Ryu, D. n., Jo, Y. n., Yoo, J. n., Chang, T. n., Ahn, D. n., Kim, Y. S., Kim, G. n., Min, H. S., Park, Y. n.  
2019; 9 (1): 15239
- **Quantitative Phase Imaging and Artificial Intelligence: A Review** *IEEE JOURNAL OF SELECTED TOPICS IN QUANTUM ELECTRONICS*  
Jo, Y., Cho, H., Lee, S., Choi, G., Kim, G., Min, H., Park, Y.  
2019; 25 (1)
- **Deep-Learning-Based Label-Free Segmentation of Cell Nuclei in Time-Lapse Refractive Index Tomograms** *IEEE ACCESS*  
Lee, J., Kim, H., Cho, H., Jo, Y., Song, Y., Ahn, D., Lee, K., Park, Y., Ye, S.  
2019; 7: 83449–60
- **Label-Free Identification of Lymphocyte Subtypes Using Three-Dimensional Quantitative Phase Imaging and Machine Learning.** *Journal of visualized experiments : JoVE*  
Yoon, J., Jo, Y., Kim, Y. S., Yu, Y., Park, J., Lee, S., Park, W. S., Park, Y.  
2018
- **Identification of non-activated lymphocytes using three-dimensional refractive index tomography and machine learning** *SCIENTIFIC REPORTS*  
Yoon, J., Jo, Y., Kim, M., Kim, K., Lee, S., Kang, S., Park, Y.  
2017; 7: 6654

- **Collaborative effects of wavefront shaping and optical clearing agent in optical coherence tomography** *JOURNAL OF BIOMEDICAL OPTICS*  
Yu, H., Lee, P., Jo, Y., Lee, K., Tuchin, V. V., Jeong, Y., Park, Y.  
2016; 21 (12): 121510
- **Label-free identification of individual bacteria using Fourier transform light scattering** *OPTICS EXPRESS*  
Jo, Y., Jung, J., Kim, M., Park, H., Kang, S., Park, Y.  
2015; 23 (12): 15792–805
- **Angle-resolved light scattering of individual rod-shaped bacteria based on Fourier transform light scattering** *SCIENTIFIC REPORTS*  
Jo, Y., Jung, J., Lee, J., Shin, D., Park, H., Nam, K., Park, J., Park, Y.  
2014; 4: 5090
- **Quantitative Phase Imaging Techniques for the Study of Cell Pathophysiology: From Principles to Applications** *SENSORS*  
Lee, K., Kim, K., Jung, J., Heo, J., Cho, S., Lee, S., Chang, G., Jo, Y., Park, H., Park, Y.  
2013; 13 (4): 4170–91