

## Yanda Cheng

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Buffalo, New York, United States

### Objective

Accomplished researcher and engineer specializing in Biomedical/Medical Engineering, Deep Learning, and Artificial Intelligence. Seeking to leverage expertise in advanced medical imaging and AI-driven technologies to contribute to the national interest of the United States through innovative research and development.

### Education

Doctor of Philosophy (PhD) in Biomedical Engineering  
University at Buffalo, Buffalo, NY  
September 2021 - Present (Expected Graduation: DEC 2025)  
Skills: Deep Learning, Artificial Intelligence (AI), PyTorch

Master of Engineering (MEng) in Biomedical Engineering  
Cornell University, Ithaca, NY  
September 2020 - May 2021  
Skills: Deep Learning, Artificial Intelligence (AI), PyTorch

Bachelor of Science in Electrical and Electronics Engineering  
University of Kentucky, Lexington, KY  
August 2015 - May 2020

### Professional Experience

Research Assistant

University at Buffalo, Buffalo, NY

September 2021 – Present

- Conduct advanced research in photoacoustic imaging, focusing on unsupervised denoising techniques using Noise2Noise networks.
- Developed dual-scan photoacoustic tomography for vascular structure imaging, contributing to the enhancement of diagnostic techniques **for elder patients in US.**
- Published significant research in top-tier journals, including IEEE Transactions on Ultrasonics, Ferroelectrics, and Frequency Control.

## Research Assistant

Cornell University, Ithaca, NY

September 2020 - May 2021

Led projects in Dr. Lewis's lab on musculoskeletal disease imaging and metatarsal loading using multiphoton fluorescence microscopy.

- Conduct research in musculoskeletal disease imaging with a focus on metatarsal loading and bone reconstruction for elderly patients.

- Develop and optimize imaging protocols to enhance diagnostic precision and efficiency.

- Create and implement advanced image processing algorithms for biomedical applications.

- Analyze imaging data to identify patterns and validate findings through experimental models.

- Utilize tools and equipment such as multiphoton fluorescence microscopy and specialized biomedical image analysis software.

## Biomedical Undergraduate Research Assistant

University of Kentucky, Lexington, KY

January 2018 - January 2019

- Developed graphical user interfaces (GUIs) and optimized image processing algorithms to enhance biomedical device performance.

- Utilized programming tools such as C# and LabView to streamline functionality and user interaction.

- Improved device reliability and precision for applications in neonatal care.

- Enabled life-saving interventions for premature infants through advanced biomedical technology integration.

## Publications

Cheng, Y., Zheng, W., Bing, R., Zhang, H., Huang, C., Huang, P., Ying, L., Xia, J. "Unsupervised denoising of photoacoustic images based on the Noise2Noise network." Biomedical Optics Express, 2024.

Huang, C., Cheng, Y., Zheng, W., Bing, R.W., Zhang, H., Komornicki, I., Harris, L.M. "Dual-scan photoacoustic tomography for the imaging of vascular structure on foot." IEEE Transactions on Ultrasonics, Ferroelectrics, and Frequency Control, 2023.

Liu, X., Gu, Y., Huang, C., Zhao, M., Cheng, Y., Jawdeh, E.G.A., Bada, H.S., Chen, L. "Simultaneous measurements of tissue blood flow and oxygenation using a wearable fiber-free optical sensor." Journal of Biomedical Optics, 2021.

## Projects

### Foot Photoacoustic Imaging

University at Buffalo | Aug 2021 - Present

- Imaging over 200 clinical patients annually to improve diagnostic methods for foot diseases using photoacoustic technology.

### Musculoskeletal Disease Imaging

Cornell University | Sep 2020 - May 2021

- Developed protocols for imaging osteocyte responses in live mice, contributing to advancements in understanding musculoskeletal diseases.

### Metatarsal Loading Protocol Development

Cornell University

- Established a protocol for delivering mechanical loads to metatarsal bones in live mice, using multiphoton fluorescence microscopy to monitor intracellular responses.

## Skills

Technical Expertise: Deep Learning, Artificial Intelligence (AI), PyTorch, C#, LabView

Medical Imaging: Photoacoustic Imaging, Ultrasound, Signal Processing, Biomedical Optics

Research & Development: Image Processing Algorithms, Biomedical Device Development, Signal Communication

## Professional Affiliations

Member, IEEE (Institute of Electrical and Electronics Engineers)

Member, SPIE (International Society for Optics and Photonics)