Neurophotonics Lab members

The Neurophotonics Lab is led by current team members and represented in the outside world by numerous alumni who are advancing optical technologies throughout academia and industry. Our current lab includes faculty, research scientists, postdoctoral fellows and graduate students, as well as medical students and clinical coordinators. We are also fortunate to have many collaborators across NYU Langone and beyond.

Lab party @Joypot, Long Island City..... September 2024.

Vivek J Srinivasan, PhD

Principal Investigator

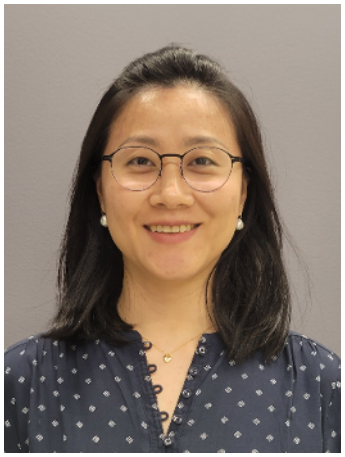
Associate Professor, Department of Ophthalmology

Associate Professor, Department of Radiology

I am an associate professor of ophthalmology and radiology at the NYU Grossman School of Medicine, and associated faculty in biomedical engineering at NYU Tandon School of Engineering. I received my PhD from the Massachusetts Institute of Technology in 2008 and was previously assistant (2012-2016) and associate (2016-2020) professor of biomedical engineering and ophthalmology at UC Davis. My lab invents or develops new light-based technologies for in vivo imaging and sensing of the brain and eye. Never satisfied with just a proof-of-principle, we actively collaborate with clinicians and other scientists to optimize and apply these technologies to solve problems in biomedical research.

Google Scholar:

https://scholar.google.com/citations?user=rZzhjFAAAAAJ&hl=en



Mingjun Zhao, PhD

Research Scientist

I work on the interferometric diffusing wave spectroscopy (iDWS) system for human brain measurement. Current efforts include increasing system light throughput for better signal to noise ratio, improving coherence gating for increasing the specificity of brain signal, and clinical translations. Before joining Dr. Srinivasan's lab, I had a background in non-interferometric diffuse optics (diffuse correlation spectroscopy/tomography, diffuse speckle contrast imaging) and their applications in measuring excising muscles and wound tissues.

Besides building heterodyne optical instruments, I also do classical 'heterodyne singing' (a.k.a choral singing) with Manhattan Choral Ensemble.

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Santosh Aparanji, PhD

Postdoctoral Fellow

I am a nanotechnologist, a laser physicist, an electronics engineer, a (pseudo) cancer biologist, and now a slowly-budding neuroscientist, but primarily a physicist who builds laser and optical systems for biomedical applications. I currently work on interferometric diffusing wave spectroscopy (iDWS) for imaging the cerebral blood flow in humans, which entails a complete arsenal of knowledge ranging from signal processing to laser physics to efficient coding to biophysics, which indeed makes for a rich use of my skills and expertise. My predominant expertise is in laser physics, and I consider myself a laser physicist who can build any exotic laser at any power, any wavelength, any polarization, any linewidth (of a few spectral shapes), with the right equipment. Outside of my lab, my predominant hobby is thinking! People may think I am doing nothing, but I deeply think all the time (mostly). (These are gedanken, like what would happen if Newton invented time travel and traveled to the future and past without our knowledge). Other hobbies include watching movies (2 movies every week at least), science communication, writing, seeing Broadway plays, listening to music and reading journals in diverse fields (psychology to quantum optics to climate science, anything).

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NYU Langone Health

Pooja Chauhan, PhD

Postdoctoral Fellow, Department of Ophthalmology

I am an enthusiastic postdoctoral researcher working in the realm of visible light Optical Coherence Tomography (OCT), focusing on retinal imaging in rodents. I joined Dr. Srinivasan's Lab in May, 2021, and since then, I have worked extensively on data analysis and image processing techniques, which gradually expanded into leading hands-on experimental efforts in visible light OCT system design, alignment, and imaging optimization for improved system performance. I earned my doctoral degree in nonlinear optics from Delhi Technological University, India, in 2020. My research interests include OCT, electron and light microscopy, and nonlinear fiber optics.

Beyond academia, I enjoy playing basketball and volleyball.

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NYU Langone Health

Alok Kumar Gupta, PhD

Postdoctoral Fellow

I work on visible light Optical Coherence Tomography (OCT) for imaging the human retina. My research interests are optics, imaging, and their bio-medical applications.

I completed my Ph.D. at the Indian Institute of Technology (IIT) Patna, where I focused on Quantitative Phase Imaging for low-light microscopy. Prior to that, I obtained a bachelor's degree in physical sciences from Delhi University and a master's degree in applied physics from Malaviya National Institute of Technology (MNIT), Jaipur.

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Thajunnisa Ashraf Sajitha, DVM, MVSc

Postdoctoral Fellow, Neurophotonics Lab & Neural Interface Engineering Lab

I am a veterinarian specialized in veterinary surgery and radiology with a deep interest in neuroimaging and brain health. I utilize multi-modal imaging platforms including OCT, contrast enhanced MRI and optoacoustic tomography to assess retinal and optic nerve integrity and the brain fluid dynamics. My goal is to combine various imaging modalities to enhance early detection and diagnostic precision in neuropathologies such as Alzheimer's disease.

Prior to my current role, I worked in the Neuroimaging and Visual Science Lab at NYU, where I focused on neuroimaging of glymphatic waste clearance pathways in the brain. Additionally, I worked on the micro-structural characterization of the retinal and optic nerve alterations in aging and glaucoma using OCT and advanced diffusion tensor and diffusion kurtosis MRI techniques.

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Rabisankar Samanta, PhD

Postdoctoral Fellow

I am currently working on various interferometric diffuse optics techniques to study static and dynamic scattering media for biomedical applications. I am also interested in the clinical translation of any diffused optics-based technology. Prior to joining this lab in Feb 2024, I obtained an integrated M.Sc.+Ph.D. degree in Physics from the Tata Institute of Fundamental Research (TIFR), Mumbai, India.

In my free time, I enjoy listening to music, watching movies in any language, reading novels, and traveling. I am a food enthusiast and also love to cook.

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NYU Langone Health

Pramila Thapa, PhD

Postdoctoral Fellow

I am currently working on visible light OCT retinal imaging, with a keen interest in translational research that directly benefits human health. Prior to this, I served as a scientist at AIIMS New Delhi, India, where I developed a multimodal optical microscope for detecting epithelial oral cancer. I earned my Ph.D. from IIT Delhi, India, focusing on the development of optical systems for early-stage cancer screening. Outside work hours, I enjoy practicing yoga and making pen and charcoal sketches.

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NYU Langone Health

Ruoyu Meng, MS

PhD candidate

I am an optical engineer, currently working on ultrahigh-resolution optical coherence tomography (OCT) systems. My research focuses on quantifying age-related structural changes and exploring functional imaging—specifically optoretinography with visible light OCT in the human retina. My broader research interests include biomedical optics, with an emphasis on advanced biomedical imaging techniques.

Previously, I worked on polarization imaging in Professor Hui Ma's lab at Tsinghua University during my master's studies, and I hold a bachelor's degree in electrical science and technology.

I am actively seeking job opportunities and engaged in academic paper reviewing in the bio-optics community.

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Moning Pan, MS

PhD student

I am a PhD student working on the visible light OCT. I have great interest in developing the performance of OCT systems and ophthalmologic topics. I achieved both my bachelor and master's diplomas in Zhejiang University. During my master's study, I obtained some experience in tumor margin detection with optical coherence elastography (OCE) and wound healing monitor with OCT angiography.

I prefer to spend my leisure time in gym or cinema. I also like exploring various food markets and find anything new to enrich my menu.

Researchgate

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