Ning Zhang

184 Hope St, Providence, RI, 02912, USA | ning_zhang1@brown.edu | +1 8579196114

https://nzhang1218.github.io/ | LinkedIn

Education

Brown University 2019 - 2025
Ph.D. in Electrical and Computer Engineering
Advisor: Arto Nurmikko

Brown University 2017 - 2019
Sc.M. in Biomedical Engineering
Advisor: Arto Nurmikko

Zhejiang University 2011 - 2015
B.Sc. in Electrical Engineering
Advisor: Hong Zhou(ZJU), Quan Zhang(Harvard)

Working Experience

Founder/CEO, STA Technology, Boston, USA 2016-2017

Lead the team to developing novel wearable cuff-less continuous blood pressure monitoring technology.

Intern Engineer, PHILIPS (Ultrasound), Shanghai, China 2016

Other Research Experience

Harvard Medical School/Mass General Hospital 2015 - 2016
Research Assistant
Advisor: Quan Zhang, Gary Strangman

Xi'an Jiaotong University 2016
Analog Device Inc Summer Camp on Analog/Digital Circuit Design
Mentor: Jianguo Yang

Publications

Neuromorphic Optical Tracking and Imaging of Randomly Moving Targets through Strongly Scattering Media 2025

Ning Zhang, Timothy Shea, Arto Nurmikko

arXiv preprint arXiv:2501.03874 (2025)
Nature Photonics (under review)

Imaging dynamic targets through scattering media with chip-scale ultra-high density diffuse optical tomography 2025

Ning Zhang, Quan Zhang, Arto Nurmikko

Optical Tomography and Spectroscopy of Tissue XVI. SPIE Photonics West, 2025.

End-to-End Neuromorphic Reconstruction of Moving Targets in Dense Scattering Media Using Event-Driven Sensing and Spiking Neural Networks 2025

Ning Zhang, Arto Nurmikko

Computational Optical Imaging and Artificial Intelligence in Biomedical Sciences. SPIE Photonics West, 2025.

Brain-Inspired Optical Imaging: A Neuromorphic Computing Approach for Image Reconstruction of Dynamic Targets Obscured by Dense Turbid Media 2024

Ning Zhang, Arto Nurmikko

Computational Optical Imaging and Artificial Intelligence in Biomedical Sciences. SPIE Photonics West, 2024.

Event-Driven Imaging in Turbid Media: A Confluence of Optoelectronics and Neuromorphic Computation 2023

Ning Zhang, Timothy Shea, Arto Nurmikko

arXiv preprint arXiv:2309.06652 (2023)

Combining a Dynamic Vision Sensor with Neuromorphic Computing for Imaging in Turbid Media 2023

Ning Zhang, Jordan Watts, Arto Nurmikko

Computational Optical Sensing and Imaging. Optica Publishing Group, 2023.

VCSEL Arrays as Chip Scale Sources for Ultra-High Density Diffuse Optical Tomography 2022

Ning Zhang, Quan Zhang, Kent D. Choquette, Arto Nurmikko

IEEE Photonics Conference (IPC). IEEE, 2022.

Sub-mm Resolution Tomographic Imaging in Turbid Media by An Ultra-High Density Multichannel Approach 2022

Ning Zhang, Quan Zhang, Arto Nurmikko

Biomedical Optics Express 13.11 (2022): 5926-5936

Ultra-High Density Diffuse Optical Tomography for Dynamical High-Resolution Imaging in Thick Turbid Media 2022

Ning Zhang, Quan Zhang, Arto Nurmikko

Optics and the Brain. Optica Publishing Group, 2022.

Technology development for simultaneous wearable monitoring of cerebral hemodynamics and blood pressure 2018

Quan Zhang,**Ning Zhang**, Lei Kang, Gang Hu et al

IEEE journal of biomedical and health informatics 23.5 (2018): 1952-1963.

Patents

High spatiotemporal resolution brain imaging 2024

Arto Nurmikko, **Ning Zhang**

U.S. Patent No. 12,035,996. 16 Jul. 2024. **[Patent Granted]**

A Compact Optoelectronic Device for Noninvasive Imaging 2023

Arto Nurmikko, **Ning Zhang**

WO2023205736A3

Thesis

A Novel Near Infrared Diffuse Optical Spectroscopy System for Stroke Prediction and Diagnosis on the Neck 2019

Master Thesis, Brown University

Development of a Wearable BP-Glass for Noninvasive Continuous Blood Pressure Monitoring 2015

Bachelor Thesis, Zhejiang University

Honors and Awards

Graduate School Travel Award, Brown University 2022-2025

The Sc.M. Achievement Award for the most outstanding master's student, Brown University 2019

Fellowship of Brown University Breakthrough Lab 2017

Fellow of Masschallenge Pulse@ Program, Boston 2017

Fellow of Garage+ Startup Global Program, Taipei, Taiwan 2017
NECINA Innovation & Entrepreneurship Competition, Finalist 2017
MIT CHIEF Business Plan Contest, Third Place 2016
The Excellent Graduation Thesis, Zhejiang University 2015
Intel Global Challenge, Finalist 2014
National Instrument Global Innovation and Design Competition, Best Prize 2014
Intel-Tsinghua National Innovation Challenge, Best Prize 2014
Harvard-China Thinks Big (CBT), Finalist 2014
Tianfu Scholarship for Outstanding College Student 2014
The First Scholarship in Research and Innovation, Zhejiang University 2014
Scholarship in Social Practice, Zhejiang University 2014
The Third Academic Excellence Scholarship, Zhejiang University 2014
National Instrument Virtual Instruments Competition, Second Place 2014

Mentorship

Mihnea Steiu, Brown 2024
Connor Macken, Honors Thesis, Brown 2024
Jordan Watts, Honors Thesis, Brown 2023
Timothe Desbordes, Research Intern, Grenoble Institute of Technology 2022
Max Petetin, Research Intern, EPF France 2019

Teaching Associate/Assistant

Sheridan Teaching Certificate on Reflective Teaching, Brown 2021
Electrical Circuits and Signals, Brown ENGN0520 2022
Digital Computing Systems, Brown ENGN0500 2021
Neuroengineering, Brown ENGN1220 2020
Digital Electronics System Design, Brown ENGN1630 2020
Photonics and Sensors, Brown ENGN1690 2019
Introduction to Engineering, Brown ENGN0030 2019, 2021
Designing Implantable Devices for the Cardiovascular System, Summer@Brown 2019

Professional Associations

Sigma Xi, Member 2021-
SPIE, Member 2022-
Optica, Member 2022-
IEEE, Member 2016-
BMES, Member 2016-