

Shashank Manjunath
Cambridge, MA
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EDUCATION

Vanderbilt University
B.Eng, Biomedical Engineering & Mathematics

Nashville, TN
2014-2018

EXPERIENCE

Charles River Analytics
Scientist - Signal Processing & Computer Vision

Cambridge, MA
May 2018-Present

Performed novel research into signal processing and computer vision techniques through funding provided by the Department of Defense. Acted as lead engineer and Principal Investigator on projects investigating real-time machine learning based image denoising techniques in the presence of complex noise sources. Acted as a supporting scientist on projects involving mobile health, and autonomous vehicle weather avoidance. Lead GPU programming efforts across the Sensor Processing and Applied Robotics division. Lead research, development and transition of R&D efforts to U.S. Navy Submarine force. Won funding for novel research from the DoD through various grant sources. Responsibilities include proposal writing and support, algorithm development, and professional as well as academic presentations.

LumaSil
Founder & Engineer

Nashville, TN
2018-2019

Founded a company focused on developing low level light therapy devices for diabetic foot wounds. Designed and implemented software on embedded platforms for device prototype. Performed novel research into light effects on methicillin-resistant *Staphylococcus aureus* (MRSA). Performed efficacy studies on therapy device for diabetic foot wounds.

Vanderbilt University Institute of Imaging Science
Undergraduate Research Assistant

Nashville, TN
2016-2018

Initiated a project investigating applications of machine learning techniques to segment magnetic resonance images. Implemented convolutional neural network based techniques to handle sciatic nerve segmentation from MRI volumes. Investigated and designed novel signal processing techniques to account for inflammation in diffusion-weighted MR images. Validated techniques on *ex vivo* MRI data of rat sciatic nerve.

CONFERENCES

Manjunath, S., Bracken, B., German, S., Monnier, C., and Farry, M. "User Activity Context Recognition From Smartphone Data Using Deep Neural Networks." Biomedical Engineering Society, October 2019 (Poster).

Manjunath, S., Thornton, W. "Deep Learning for Maritime Imagery." Submarine Technology Symposium, May 2019 (Oral)

Grisham, C., **Manjunath, S.**, Perlin, B., Russo, A., Wigginton, N., Walker III, M. "Low-Level Light Therapy for Improvement of Diabetic Foot Ulcer Infection Outcomes." Biomedical Engineering Society, October 2018 (Poster)

Manjunath, S., Manzanera-Esteve, I., Thayer, W., Does, M., Dortch, R. “Free-Water Elimination Diffusion Tensor Imaging to Assess Nerve Recovery in Excised Rat Nerve.” International Society of Magnetic Resonance in Medicine, June 2018 (Poster)

Hancock, M., **Manjunath, S.**, Dortch, R. “Sciatic Nerve Segmentation in MRI Volumes of the Upper Leg via 3D Convolutional Neural Networks.” International Society of Magnetic Resonance in Medicine, June 2018 (Poster)

Manjunath, S., Dortch, R., “Sciatic Nerve Segmentation in MR Images of the Upper Leg via Convolutional Neural Networks.” Biomedical Engineering Society, October 2017 (Poster)

AWARDS AND HONORS

- Thomas Arnold Prize for Biomedical Systems Design (2018)
- Thomas J. Watson Scholarship (2014)

PATENTS

[Pending] Grisham, C., **Manjunath, S.**, Perlin, B., Russo, A., Wigginton, N., Walker III, M. “Apparatus for Providing Low Level Light Therapy.” Application No. 62/873166.

SKILLS

General Skills

Signal Processing, Computer Vision, Machine Learning, GPU Programming

Programming Languages

Python, C/C++, MATLAB

DevOps and Libraries

Git, Numpy, Scipy, Pandas, Scikit-learn, OpenCV, PyTorch, TensorFlow, CUDA, CUDNN

References provided upon request