Shashank Manjunath

Cambridge, MA

shashankmanjunath14@gmail.com

(978)-727-2910

EDUCATION

Boston University   **Boston, MA**

M.S., Electrical Engineering   *2020-2022*

Thesis:

Machine Learning Techniques for Reconstruction and Segmentation of Nanoparticle Interferometric Signatures

Advisor: M. Selim Ünlü

Vanderbilt University   **Nashville, TN**

B.Eng, Biomedical Engineering & Mathematics   *2014-2018*

EXPERIENCE

Linus Health   **Boston, MA**

Senior Data Scientist   *February 2022-Present*

Developed novel signal processing and machine learning techniques to improve brain health assessment.

Charles River Analytics   **Cambridge, MA**

Scientist - Signal Processing & Computer Vision   *May 2018-February 2022*

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, connectome fingerprinting, and applications of machine learning techniques to information extraction from laser vibrometry data, among others. Lead GPU programming efforts across the Sensor Processing and Applied Robotics division. Designed, built, and administered GPU Compute Cluster for internal company use. 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   **Nashville, TN**

Founder & Engineer   *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   **Nashville, TN**

Undergraduate Research Assistant   *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

- Graduate Merit Scholarship (2020)
- Thomas Arnold Prize for Biomedical Systems Design (2018)
- Thomas J. Watson Scholarship (2014)

SKILLS

General Skills

Signal Processing, Computer Vision, Machine Learning, GPU Programming

Programming Languages

Python, C/C++, MATLAB

DevOps and Libraries

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

References provided upon request