MINH TRAN

Dallas, TX 75252
linkedin.com/in/minhtran97
github.com/mtran5
minh.tran.3140@gmail.com

EDUCATION

PhD in Bioengineering May 2020 – May 2024 (expected)
University of Texas at Dallas GPA 3.97

Bachelor's Degree in electrical engineering August 2015 – May 2020
University of Wyoming GPA 3.96
Minor in Computer Science

TECHNICAL PROJECTS

Thyroid Cancer Identification with Deep Learning (Python, C++, AWS)

- Developed software in C++ to control multispectral microscope and capture images of thyroid
- Used pandas, OpenCV, and SciPy to clean, label, and classify 150,000 multispectral microscope images
- Trained a vision transformer in PyTorch to detect thyroid cancer with 0.906 AUC
- Proposed new data augmentation techniques for multispectral data and improved detection accuracy by 4%
- Used Amazon SageMaker and wandb to check training on GPUs
- Presented research result orally at the 2022 SPIE Medical Imaging Conference

Sleep Stages Classification with Clustering (MATLAB)

- Processed and analyzed 500 hours of EEG and EOG signal data collected from 100 individuals
- Used MATLAB to create wavelet transform features extractor
- Used hierarchical clustering and DBSCAN to classify stages of sleep from extracted features with 84% accuracy
- Collaborated on creating a wearable that detect sleep apnea using clustering methods described

Posture Detection with Inertial Measurement Unit (MATLAB)

- Planned and conducted scientific studies on 17 volunteers wearing exoskeletons and inertial measurement units (IMU) sensors.
- Used MATLAB to analyze 20 hours of sensor data taken during various activities
- Used stepwise forward selection to select the most relevant features out of 120 total features
- Used Naïve Bayes classifier to classify five activities (squatting, slouching, sitting, standing, and walking) with 92.2% accuracy.

JOB EXPERIENCES

Graduate Researcher, University of Texas at Dallas, TX May 2020 – Present

- Developed software for microscope in C++ and reduced acquisition time by 300%
- Co-authored a U-Net in TensorFlow that increases resolution of spectral images 16 times
- Communicated with vendors to order $50,000 worth of optical equipment
- Wrote and co-wrote 6 publications. Presented research orally at 3 conferences
- Mentored an undergraduate student in a PyTorch deep learning project; won undergraduate poster award

Research Intern, Northwestern University, IL May 2018 – August 2018

- Evaluated 30 CT scans in Python and produced figures for a publication
- Removed noise and artifact from CT images using wavelet transform

Undergraduate Researcher, University of Wyoming, WY May 2017 – June 2019

- Designed games using Unity and C# with the aim to rehabilitate stroke victims
- Wrote two grant proposals that were accepted by the National Institutes of Health for $2,200 total
- Conceived and performed two scientific studies on human wearing exoskeletons

TECHNICAL SKILLS

Programming languages: Python, C++, C#, Java, MATLAB, R, SQL
Data Science: TensorFlow, PyTorch, pandas, scikit-learn, NumPy, SageMaker, Hadoop, Excel
Software Development: Git, GitHub, Docker, Visual Studio, AWS
Research: Study Design, Statistical Analysis, Mathematical Modeling, Presentation
Coursework: Digital Image Processing, Experimental Methods and Statistical Analysis, Machine Learning, Algorithms and Data Structures, C++ for Engineers