Binh Nguyen

binhtnguyen95@gmail.com · 209.406.6378 · linkedin.com/in/binh-t-nguyen · github.com/howyoubinh

Education

University of California, San Diego — La Jolla, CA
B.S. Bioengineering: BioSystems, Minor: Cognitive Science — 2018

Skills

Programming:	Python, Matlab, C, JavaScript, SQL, UNIX, Shell, Git, LaTeX
Libraries:	NumPy, Pandas, Scikit-learn, Jupyter, TensorFlow, Keras, Django
Systems/Hardware:	LabVIEW, Simulink, Raspberry Pi, Arduino, PCB, Soldering, ECG

Experience

Acutus Medical, Inc. — Carlsbad, CA
Clinical Science Engineer Intern — July 2018 — Present

- Lead development of a segmentation algorithm for dividing left atrium into 8 distinct spatial regions based on user-selected vertices in Matlab for use as a clinical research tool
- Build, train, and test an RNN-LSTM model on multiple datasets consisting of 200K+ datapoints for detecting disturbances and noise in ECG localization
- Create Matlab script to visualize propagation of conduction velocity vectors and repetitive activation patterns to identify arrhythmic patterns
- Improve ECG signal approximation and catheter localization algorithm by retraining weights on significant channels using amplitude-based thresholding
- Automate the retrieval, parsing, and organization of data from animal studies and clinical trials

Cartilage Tissue Engineering Lab, UCSD — La Jolla, CA
Undergraduate Researcher — June 2017 — August 2017

- Developed an algorithm for comparing correctly-identified cells in automated program against the gold standard to validate feasibility and reduce labor-intensive tasks
- Reconstructed 3D tissue images from 2D cross-sectional images using Digital Volumetric Imaging from multi-GB struct data types in Matlab
- Collaborateed with Master's and PhD students to implement 2D and 3D cell segmentation techniques involving adaptive thresholding and pixel intensities
- Presented research findings at the UCSD Summer Research Conference

Lab Assistant — August 2016 — April 2018

- Scanned, processed, and organized microCT images in local filesystem and server database
- Assisted with tissue culture generation, dissection, buffer-making, and staining for research experiments
- Checked, maintained, and serviced lab equipment to increase productivity and prevent downtime
- Wrote, conducted, and updated SOPs, ensuring up-to-date guidelines for lab-wide tasks

Projects

Neural Network-controlled Drone via Voice Recognition — 2018

- Constructed DJI Flamewheel drone using DIY kit and interfaced with DroneKit Python API
- Achieved 90% accuracy in audio recognition using k-fold cross-validation methods via scikit-learn/TensorFlow

Arduino-powered LED Pacemaker — 2017

- Designed ECG circuit with variable components to measure voltage and detect heart beats
- Programmed an Arduino Mega to calculate heart rate and emit a different color LED based on the arrhythmia

Coursework

Data Analysis, Machine Learning, Statistics and Probability, Data Structures, Algorithms
Numerical Analysis, Analog Design, Circuits and Systems, Signal Processing,
Bioinstrumentation, Biomedical Optics, Biomechanics, Human Physiology

Interests

Neuroscience, Medical devices, Game development, Music, Cooking, Lifting, Hiking, Meeting new people