Frank Tranghese

http://www.linkedin.com/in/franktranghese/
Citizenship: USA

Email : ftrang88@gmail.com
Mobile : 508.308.7625

Education

- **Boston University** — Boston, MA
  M.S. in Electrical Engineering; GPA: 3.5 — *Aug. 2016 – May 2018*
- **Boston University** — Boston, MA
  B.S. in Biology and Psychology; GPA: 3.3 — *Aug. 2007 – May 2011*

Experience

- **Boston University - Horenstein Lab** — Boston, MA
  Graduate Research Assistant — *Jan. 2017 - Aug. 2017*
  - **Sub-Millivolt Electric Field Sensor**: Developed data acquisition and signal processing pipeline in MATLAB for highly sensitive electric field sensor. Utilized digital filters, spectral density estimation, and periodogram averaging to detect field in SNR less than 0 dB. Designed and coded MATLAB GUI to provide easy to use, rapid testing environment. Aided in refinement of sensor design.
  - **Circuit Design and Testing**: Built, tested, and refined analog filters, three-phase motor drivers, and PID motor controllers for optimizing electric field sensor signal output.
- **Boston University** — Boston, MA
  Master's Student — *Aug. 2016 - May 2018*
  - **Lane Tracking for Autonomous Cars**: Using Python and OpenCV, developed system that tracks unmarked roads with K-means clustering and morphological transformations on optical images. Implemented techniques present in the literature using image intensity for improved robustness to weather and lighting variations.
  - **Video Compression and Transformations**: Developed Java programming pipeline that encoded 100+ images into a playable video in under 5 minutes using chroma sub-sampling and discrete cosine transform. Allowed for optional video transformations (grayscale, Gaussian blur, color inversion) and output video quality selection.
- **Harvard Medical School** — Boston, MA
  Research Assistant and Lab Manager — *Jun. 2013 - Jun. 2016*
  - **Sengupta Lab**: Profiled metabolic factors associated with GABRA5 signaling in medulloblastoma. Implemented dosing and conditioning of human cells lines for drug treatment and molecular assays. Managed all laboratory logistics; including ordering and supply management, solution preparation, and acted as liaison to collaborating scientists. Coordinated with administrative groups to maintain strict laboratory regulations and procedures.
  - **Pomeroy Lab**: Examined stress-mediated alternative protein translation and its role in cancer development. Researched disrupted circadian rhythm and resulting chromatin remodeling in medulloblastoma cells.

Publications

- **First in vivo testing of novel compounds targeting Group 3 medulloblastoma using an implantable microdevice as a new paradigm for drug development** Journal of Biomedical Nanotechnology, Jun 2016 (https://doi.org/10.1166/jbn.2016.2262)

Skills

- **Programming Languages**: Java, C++, MATLAB, Python
- **Technologies**: Git, OpenCV, FFMPEG, Data Acquisition Package (MATLAB), DSP Systems Toolbox (MATLAB), Simulink, PSpice/LTSpice, IntelliJ, ImageJ, ECP Model 220 Plant Emulator, MS Office Suite (including Word, Excel, Powerpoint), Adobe Photoshop
- **Technical Skills**: Analog/Digital Filter Design, Control System Design, Agile Software Development, Stochastic Estimation and Bayesian Inference, Machine Learning, Algorithm design and analysis, Parallel Programming