WILLIAM NISBETT

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Bi-lingual image processing specialist passionate about leveraging skills in data analysis, machine learning, and signal processing to develop solutions to challenging problems.

EDUCATION

The University of Houston	Masters of Science, Physics	July 2019
	Bachelors of Arts, Chinese Studies	May 2017
	Bachelors of Science, Physics	May 2017

PROFESSIONAL EXPERIENCE

University of Houston Imaging Physics Lab – Image Processing Engineer; Houston, TX — December 2015 – Present

NSF, DOD, and NIH funded lab focused on cutting edge X-ray imaging

- Developed and implemented a library of tools for analyzing medical image texture that improved breast cancer detection by ~20%
- Optimized X-ray phase retrieval algorithms and phase contrast imaging geometries that improved soft tissue contrast by ~60%
- Optimized single-shot dual energy imaging algorithms that improved contrast agent visibility by ~6x
- Conducted gaze tracking experiments to characterize and predict radiologists' eye movements and fixations during clinical tasks

Center for Theoretical Biological Physics – Molecular Dynamics Researcher; Houston, TX — April 2014 – September 2014

An NSF designated Physics Frontiers Center

- Simulated protein denaturation to understand how changes in intermolecular forces drive the formation of stable intermediates
- Investigated free energy landscapes of the enzyme PGK and proposed possible mechanisms for its unique unfolding behavior

PUBLICATIONS

- Nisbett, W. H., Kavuri, A., & Das, M. (2018). Investigating the contributions of anatomical variations and quantum noise to image texture in digital breast tomosynthesis. *Medical Imaging 2018: Physics Of Medical Imaging*.
- Nisbett, W. H., Kavuri, A., Fredette, N. R., & Das, M. (2017). On the impact of local image texture parameters on search and localization in digital breast imaging. *Medical Imaging 2017: Image Perception, Observer Performance, And Technology Assessment*.
- Wen, X., & Jiang, X. (2018). *Studies on learning and teaching Chinese as a second language*. London: Routledge.

SKILLS

- Proficiency in: Python, SQL, Excel, Statistics, Communication & Presentation Skills, Object-Oriented Design, UNIX, MATLAB
- Familiar with: Tableau, R, Supervised/Unsupervised Machine Learning, Neural Networks, Java, C++, Git, Bash
- Exposure to: Javascript, C#, HPC
- Tools and Packages: AWS, PyTorch, Scikit-learn, Fastai, NumPy, Pandas, SciPy, Matplotlib, Seaborn, Plotly, Multiprocessing, Pillow, OpenCV, BeautifulSoup, H5py, TkInter
- Language: Mandarin Chinese – 6 years local study and 3 months abroad in Shanghai, Beijing, and Suzhou; HSK Level 5

PROJECTS

- Yelp Scraper: Built a bot to scrape restaurant data from Yelp using Python and BeautifulSoup
- Fast.ai: Built modern machine learning algorithms for image classification, regression, and NLP using PyTorch and Fastai
- Image Texture: Characterized the role of image texture in perception and presented findings at three international conferences
- Studies on Learning Chinese: Audited scientific methods and language fidelity for an anthology of state-of-the-art research

EXTRACURRICULARS

Wushu Collegiate Champion and Instructor — August 2010 – Present

- University Wushu Games: 1st, UC Berkeley CMAT: 2nd
- Coached over 200 students from ages 4-60, including national and international grand champions
- Selected for a 3-month intensive training regimen at Shanghai's Fudan University with world champion Coach Wei Jian

Private Tutor — August 2018 – Present

- Fostered academic success of 13 middle-school and high-school students through one-on-one tutoring in math and science

HONORS

The 16th Chinese Bridge – National Chinese Proficiency Competition for Foreign College Students: Runner Up	April 2017
University of Houston Presidential Fellowship	August 2017
Excellence in Chinese Studies Scholarship	April 2016
Sino-USA Friendship Award	April 2016