

HONGYI DUANMU

Stony Brook University ◊ NY , 11790

+1 (631) 542 3609 / +86 13145556898 ◊ hduanmu@cs.stonybrook.edu

RESEARCH INTERESTS

Deep Learning, Medical Image Analysis, Computer Vision

EDUCATION

Stony Brook university Ph.D. candidate, Department of Computer Science Advisor: Dr. Fusheng Wang	<i>2017.09 - present</i>
University of British Columbia Exchange student	<i>2016.07 - 2016.08</i>
University of Science and Techonology of China B.E., School of Information Science and Technology Advisor: Dr. Yan Song	<i>2013.09 - 2017.09</i>

RESEARCH EXPERIENCE

Graduate Research Intern <i>Alibaba DAMO academy, Hangzhou, China</i>	<i>2020.12 - 2021.08</i>
Graduate Research Assistant <i>Data Management and Biomedcial Data Analytics Lab, NY, USA</i>	<i>2018.02 - present</i>
Graduate Research Assistant <i>Brookhaven National Laboratory, NY, USA</i>	<i>2018.02 - 2018.09</i>
Deep learning Algorithm Researcher Assistant <i>Jcube Technology LLC, NY, USA</i>	<i>2018.06 - 2018.09</i>
Undergraduate Research Assistant <i>National Engineering Laboratory for Speech and Language Information Processing, China</i>	<i>2014.10 - 2017.06</i>

PUBLICATIONS

1. **H. Duanmu**, Shristi Bhattarai, Hongxiao Li, Chia Cheng Cheng, Fusheng Wang, George Teodoro, Emiel A.M. Janssen, Keerthi Gogineni, Preeti Subhedar, Ritu Aneja, Jun Kong, *Spatial Attention-based Deep Learning System for Breast Cancer Pathological Complete Response Prediction with Serial Histopathology Images in Multiple Stains*. In Proceedings of the 24th International Conference on Medical Image Computing and Computer Assisted Intervention (MICCAI 2021), September 27 - October 1, 2021, Strasbourg, France.
2. **H. Duanmu**, Fusheng Wang, George Teodoro, Jun Kong, *Foveal blur-boosted segmentation of nuclei in histopathology images with shape prior knowledge and probability map constraints*. Bioinformatics, 2021

3. **H. Duanmu**, P. Huang, S. Brahmavar, S. Lin, T. Ren, J. Kong, F. Wang* and T. Duong*, *Prediction of Pathological Complete Response to Neoadjuvant Chemotherapy in Breast Cancer Using Deep Learning with Integrative Imaging, Molecular and Demographic Data*. In Proceedings of the 23rd International Conference on Medical Image Computing and Computer Assisted Intervention (MICCAI 2020). October 4-8, 2020, Lima, Peru.
4. **H. Duanmu**, J. Kim, P. Kanakaraj, A. Wang, J. Joshua, J. Kong and F. Wang, *Automatic Brain Organ Segmentation with 3D Fully Convolutional Neural Network for Radiation Therapy Treatment Planning*. In Proceedings of 2020 IEEE 17th International Symposium on Biomedical Imaging (ISBI 2020). Apr 2-7, 2020, Iowa City, Iowa, USA
5. H. Yao, S. Rashidian, X. Dong, **H. Duanmu**, R. Rosenthal and F. Wang, *Detection of Suicidality among Opioid Users on Reddit: A Machine Learning Based Approach*. Journal of medical internet research 22.11 (2020): e15293
6. T. Ren, R. Cattell, **H. Duanmu**, P. Huang, L. Li, R. Vanguri, M. Liu, S. Jambawalikar, R. Ha, F. Wang, J. Cohen, C. Bernstein, L. Bangiyev, T. Duong, *Convolutional neural network prediction of axillary lymph-node metastasis using standard clinical breast MRI*, Clinical Breast Cancer. 20(3), e301-e308 (2020)

ONGOING PROJECTS

Inferring spatial relationships between cells from single cell transcriptomic data

Single-cell RNA sequencing (scRNA-seq) provides details for individual cells. however, crucial spatial information is often lost in sequencing. We explored the way of reconstructing spatial information from single cell transcriptomic data using deep learning techniques (0.5 Pearson Correlation Coefficient). (in submission to Nature Biotechnology)

Multi-modality histopathology image analysis system

H&E stained images and IHC stained images (Ki-67 and PHH3) provide different information on the cell status especially tumor cell status, which plays an important role in tumor staging and treatment planning. After the registration of neighboring slices, we can conduct research on detection, segmentation, and prediction in a multi-modality manner.

TEACHING

Computer Science II, CSE215 <i>Stony Brook University</i>	<i>2018 Spring</i>
System Fundamentals II, CSE330 <i>Stony Brook University</i>	<i>2017 Fall</i>
Linear Electronic Circuits <i>University of Science and Technology of China</i>	<i>2016 Fall</i>

TECHNICAL STRENGTHS

Computer Languages	Python, MATLAB, C/C++
Deep Learning Languages	Tensorflow, Keras, PyTorch, Caffe

ACADEMIC SERVICE

IEEE Student Member
IEEE Signal Processing Society Membership