JIANAN CHEN

M621, 2075 Bayview Ave, Toronto, ON, CA M4N 3M5
E-mail: geoff.chen@mail.utoronto.ca

OVERVIEW

I am a Ph.D. candidate in the Department of Medical Biophysics at University of Toronto. My research has been focused on the stratification of cancer patients using medical image analysis. I am interested in developing unsupervised and weakly-supervised algorithms to solve clinical problems.

EDUCATION

Ph.D. Medical Biophysics, University of Toronto, Toronto, CA *(2018 –)*
Supervisor: Anne Martel

M.Sc. Web Intelligence King's College London, London, UK *(2016 – 2017)*
M.Sc. in Web Intelligence High Distinction

B.Eng. Communications Engineering, Shanghai University, Shanghai, China *(2010 - 2014)*
B.Eng. in Communications Engineering First Class Honours

PREPRINTS

1. **Chen, J.**, Liu, L.Y., Han, W., Wang, D., Cheung, A.M., Tsui, H. and Martel, A.L., 2022. General stain deconvolution of histopathology images with physics-guided deep learning. bioRxiv.
2. Balsiger, F., Jungo, A., **Chen, J.**, Ezhov, I., Liu, S., Ma, J., Paetzold, J.C., Sekuboyina, A., Shit, S., Suter, Y. and Yekini, M., 2021. The MICCAI Hackathon on reproducibility, diversity, and selection of papers at the MICCAI conference. arXiv preprint arXiv:2103.05437.
3. **Chen, J.** and Martel, A.L., 2022. Metastatic Cancer Outcome Prediction with Injective Multiple Instance Pooling. arXiv preprint arXiv:2203.04964.

CONFERENCE PUBLICATIONS

4. **Chen, J.**, Cheung, H., Milot, L. and Martel, A.L., 2021. AMINN: Autoencoder-based Multiple Instance Neural Network Improves Outcome Prediction of Multifocal Liver Metastases. *Accepted for Oral presentation*, International Conference on Medical Image Computing and Computer-Assisted Intervention (MICCAI), 2021. *Oral presentation*
5. Ma, J., Wei, Z., Zhang, Y., Wang, Y., Lv, R., Zhu, C., Chen, G., Liu, J., Peng, C., Wang, L., Wang, Y. and **Chen, J.** How Distance Transform Maps Boost Segmentation CNNs: An Empirical Study. In Medical Imaging with Deep Learning, 2020.
6. **Chen, J.**, Amemiya, Y., Kuling, G., Fashandi, H., Yerofeyeva, Y., Hussein, H., Slodkowska, E., Ginty, F., Seth, A., Yaffe, M. and Martel, A.L., Texture heterogeneity of breast tumour in magnetic resonance imaging can be explained by differentially regulated genes. In Proceedings of San Antonio Breast Cancer Symposium, AACR, 2019.
7. **Chen, J.**, Milot, L., Cheung, H.M. and Martel, A.L., Unsupervised Clustering of Quantitative Imaging Phenotypes Using Autoencoder and Gaussian Mixture Model. In International Conference on Medical Image Computing and Computer-Assisted Intervention (MICCAI), 2019.

JOURNAL PUBLICATIONS

8. Ma, J., **Chen, J.**, Ng, M., Huang, R., Li, Y., Li, C., Yang, X. and Martel, A.L., 2021. Loss Odyssey in Medical Image Segmentation. Medical Image Analysis, 2021.

9. Gao, M., Liu, S., **Chen, J.**, Gordon, K.C., Tian, F. and McGoverin, C.M., 2021. Potential of Raman Spectroscopy in Facilitating Pharmaceutical Formulations DevelopmPotential of Raman Spectroscopy in Facilitating Pharmaceutical Formulations DevelopmentâĂŞAn AI perspective. International Journal of Pharmaceutics, 2021.
10. Ma, J., Wang, Y., An, X., Ge, C., Yu, Z., **Chen, J.**, Zhu, Q., Dong, G., He, J., He, Z. and Nie, Z., 2020. Towards Efficient COVID-19 CT Learning: A Benchmark for Lung and Infection Segmentation. Medical Physics, 2020.
11. Zheng, L., Shen, L., **Chen, J.**, An, P. and Luo, J., No-reference quality assessment for screen content images based on hybrid region features fusion. IEEE Transactions on Multimedia, 2019.
12. **Chen, J.**, Shen, L., Zheng, L. and Jiang, X., Naturalization module in neural networks for screen content image quality assessment. IEEE Signal Processing Letters, 2018.

WORKSHOP PUBLICATIONS

13. Ma, J. and **Chen, J.**, 2022. NnUNet with Region-based Training and Loss Ensembles for Brain Tumor Segmentation. In International MICCAI Brainlesion Workshop (pp. 421-430). Springer, Cham.
14. Ciga, O., **Chen, J.** and Martel, A., 2019. Multi-layer domain adaptation for deep convolutional networks. In Domain Adaptation and Representation Transfer and Medical Image Learning with Less Labels and Imperfect Data, (DART–MICCAI) 2019.

REVIEW CONTRIBUTIONS

International Conference on Medical Image Computing & Computer Assisted Intervention (MICCAI) 2020 - 2022
Medical Image Analysis 2021
Frontiers in Oncology 2021
IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS) 2018

TEACHING EXPERIENCE

Teaching assistant, Vector Institute & Michener Institute
AICC110 - AI for Clinician Champions Certificate Program, Winter 2021
Teaching assistant, University of Toronto
CSC401/2511 - Natural Language Computing, Spring 2019 **Supervisor**: Prof. Frank Rudzicz
CSC108 - Introduction to Programming, Fall 2020

SELECTED AWARDS

MBP Caven Fellowship

Nominated for Ontario Graduate Scholarship (Top 2 out of 96 among MBP International students)

MICCAI Travel Award 2021

Medical Biophysics Excellence Award 2020 & 2021 & 2022

Best Contribution Award, MICCAI Hackathon 2020

Vector-Mitacs Accelerate Fellowship

Sunnybrook Research Institute Travel Award

Steve Barker Memorial Prize – Top 1 of KCL Web Intelligence Class

First prize scholarship – Top 5% of SHU Class