HUSSEIN MOHSEN
MohsenH@mskcc.org | http://www.husseinmohsen.com

WORK EXPERIENCE

Memorial Sloan Kettering Cancer Center, Morris Lab – *Postdoctoral Research Fellow* **Jul 2022-present**
New Books Network *History of Science* Podcast – *Host* **Sep 2021-present**
Yale University, New Haven, CT, USA – *Teaching Fellow* **Jan-May 2019, Jan-May 2020**
Lattice Engines, Inc., San Mateo, CA, USA - *Research Engineer* **Jun 2015-Jul 2016**
Indiana University, Bloomington, IN, USA - *Associate Instructor* **Aug 2013-May 2015**
CCT International, Beirut, Lebanon - *Software Developer* **Mar 2011-Aug 2012**

EDUCATION

Yale University, New Haven, CT, USA
Doctor of Philosophy (PhD) in Computational Biology & Bioinformatics **Aug 2016-May 2022**
Committee: Mark Gerstein, Lajos Pusztai, Kei-Hoi Cheung, Sahand Negahban
Thesis Title: Network Approaches to the Study of Genomic Variation in Cancer

Master of Arts (MA) in History of Science & Medicine **Jan-Dec 2019**
Graduate Certificate in Public Humanities **Jan-Dec 2021**

Indiana University, Bloomington, IN, USA **Aug 2013-May 2015**
Master of Science (MS) in Bioinformatics (Core: Computer Science)

Newcastle University, Newcastle upon Tyne, UK **Sep 2012-Aug 2013**
Postgraduate Exchange Student at the School of Computing Science

Lebanese American University, Beirut, Lebanon **Sep 2008-Jun 2011**
Bachelor of Science (BS) in Computer Science with High Distinction

PUBLICATIONS

Under Review

J. Warrell, **H. Mohsen**, and M. Gerstein. Compression-based Network Interpretability Schemes, *bioRxiv:* 358226.

J. Warrell*, H. Mohsen*, and M. Gerstein. Interpretability and Implicit Model Semantics in Biomedicine and Deep Learning.

Research Papers

T. Qing*, **H. Mohsen***, V.L. Cannataro, M. Marczyk, M. Rozenblit, J. Foldi, M.F. Murray, J.P. Townsend, Y. Kluger, M. Gerstein, and L. Pusztai (2022). Cancer Relevance of Human Genes, *Journal of the National Cancer Institute*, djac068.

H. Mohsen, V. Gunasekharan, T. Qing, M. Seay, Y. Surovtseva, S. Negahban, Z. Szallasi, L. Pusztai, and M. Gerstein (2021). Network propagation-based prioritization of long tail genes in 17 cancer types, *Genome Biology*, 22, 287.

T. Qing, **H. Mohsen**, M. Marczyk, Y. Ye, T. O'Meara, H. Zhao, J.P. Townsend, M. Gerstein, C. Hatzis, Y. Kluger and L. Pusztai (2020). Germline variant burden in cancer genes correlates with age at diagnosis and somatic mutation burden, *Nature Communications*, 11, 2438.

H. Mohsen, J. Warrell, M.R. Min, S. Negahban, and M. Gerstein (2020). Weight-based Neural Network Interpretability using Activation Tuning and Personalized Products, *Machine Learning in Computational Biology Workshop (MLCB'20).*

M. Amodio, D. van Dijk, K. Srinivasan, W.S. Chen, **H. Mohsen**, K.R. Moon, A. Campbell, Y. Zhao, X. Wang, M. Venkataswamy, A. Desai, V. Ravi, P. Kumar, R. Montgomery, G. Wolf, and S. Krishnaswamy (2019). Exploring Single-Cell Data with Deep Multitasking Neural Networks, *Nature Methods*, 16, pp. 1139–1145.

S. Lou, K.A. Cotter, T. Li, J. Liang, **H. Mohsen**, J. Liu, J. Zhang, S. Cohen, J. Xu, H. Yu, M. Rubin, and M. Gerstein (2019). GRAM: A generalized model to predict the molecular effect of a non-coding variant in a cell-type specific manner, *PLoS Genetics*, 15 (8): e1007860.

J. Warrell, **H. Mohsen**, and M. Gerstein (2018). Rank Projection Trees for Multilevel Neural Network Interpretation, *NeurIPS Machine Learning for Health Workshop (NeurIPS'18 ML4H)*.

H. Mohsen, H. Tang, and Y. Ye (2017). DNPipe: Improving De Novo Metatranscriptome Assembly via Machine Learning Algorithms, *International Journal of Computational Biology and Drug Design (IJCBDD),* 2 (10), pp. 91-107.

H. Mohsen, H. Kurban, K. Zimmer, M. Jenne, and M. Dalkilic (2015). Red-RF: Reduced Random Forests using priority voting dynamic data reduction, *IEEE International Congress on Big Data (IEEE BigData Congress'15)*, pp. 118-125.

H. Mohsen, H. Kurban, M. Jenne, and M. Dalkilic (2014). A New Set of Random Forests with Varying Dynamic Data Reduction and Voting Techniques, *IEEE International Conference on Data Science and Advanced Analytics (IEEE DSAA'14)*, pp. 309-405.

N. Mansour and **H. Mohsen** (2014). Computational Evaluation of Protein Energy Functions, *International Conference on Intelligent Computing (ICIC'14), Lecture Notes in Computer Science (LNCS): Intelligent Computing in Bioinformatics*, 8590, pp. 288-299.

H. Mohsen (2014). A Model to Measure Inter-communication between Segregated Communities, *IEEE International Conference on Behavioral, Economic and Social Computing (IEEE BESC'14)*, pp. 1-6.

Reviews and Commentary

H. Mohsen (2020). Race and Genetics: Somber History, Troubled Present, *Yale Journal of Biology and Medicine*, 93 (1), pp. 215-219.

F.C.P. Navarro, **H. Mohsen**, C. Yan, S. Li, M. Gu, W. Meyerson, and M. Gerstein (2019). Genomics and data science: an application within an umbrella, *Genome Biology*, 20 (109).

SKILLS

Programming: Python, R, TensorFlow, Java, MPI
Web Development: Javascript, PHP, HTML, CSS
Other: UNIX, Adobe Photoshop and Illustrator

AWARDS & HONORS

American Association for Cancer Research (AACR) Scholar-in-Training Award	**Oct 2020**
Franke Fellowship in Science and the Humanities	**2019-2020**
Gruber Science Fellowship	**2016-2019**
Fulbright Scholarship	**2013-2015**
Erasmus Mundus Scholarship	**2012-2013**
Best Computer Science Capstone Project Award at LAU (class of 2011)	**Jul 2011**
2nd rank, Nokia-NNA contest for mobile application development in Lebanon	**Jul 2010**
Extreme Programmer Award, ACM LCPC Contest, Beirut, Lebanon	**Jul 2010**
Lebanese American University Honor List	**2009-2011**
Lebanese American University Merit Scholarship	**2008-2011**