Clinton J. Wang

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Education

Ph.D. Candidate, Massachusetts Institute of Technology 2020–present

Electrical Engineering and Computer Science, GPA: 5.0/5.0
Advisor: Polina Golland

S.M. Massachusetts Institute of Technology 2018–2020

Electrical Engineering and Computer Science, GPA: 5.0/5.0
Thesis: High fidelity medical image-to-image translation
Advisor: Polina Golland
Coursework: Computer Vision, Inference and Information Theory, Natural Language Processing, Digital Image Processing, Analysis on Manifolds, Fourier Analysis

B.Sc. Yale University, *Magna Cum Laude* 2011–2015

Biomedical Engineering, GPA: 3.9/4.0

Research Experience

Iterative Scopes Summer 2022
Self-supervised trajectory estimation in monocular endoscopy videos.

MIT Computer Science and Artificial Intelligence Laboratory 2018–present
Advised by Polina Golland
Robust, interpretable GANs for image-to-image translation on brain MRIs; few-shot segmentation of fetal MRI; discretization invariant learning on neural fields.

Yale Radiology Research Lab 2017–2018
Advised by Jim Duncan
Interpretable deep learning for hepatic lesion classification on MRI; tumor segmentation; statistical analysis of longitudinal image-derived features; PACS integration.

PwC (Analytics & Technology Consultant) 2015–2017
Semi-supervised keyword extraction and topic classification on social media feeds with LSTMs; logic and code for cleansing, matching and merging customer data for a major airline.

Yale School of Engineering & Applied Science 2014–2016
Advised by Stuart Campbell
Multi-scale computational model of heart muscle contraction using interacting Markov models.

Yale School of Engineering & Applied Science 2013
Advised by Hal Blumenfeld
Time series and Fourier analysis of EEGs to characterize propagation of partial seizures.

Journal Articles and Conference Proceedings

Pre-Trained Language Models for Interactive Decision-Making
Shuang Li, Xavier Puig, Chris Paxton, Yilun Du, **Clinton Wang**, Linxi Fan, Tao Chen, De-An Huang, Ekin Akyürek, Anima Anandkumar, Jacob Andreas, Igor Mordatch, Antonio Torralba, Yuke Zhu.
NeurIPS (2022), [Acc. Rate 25.6%]. [Paper] [Project] [Code]

Deep learning–assisted differentiation of pathologically proven atypical and typical hepatocellular carcinoma (HCC) versus non-HCC on contrast-enhanced MRI of the liver
Paula M. Oestmann, **Clinton J. Wang**, Lynn J. Savic, Charlie A. Hamm, Sophie Stark, Isabel Schobert, Bernhard Gebauer, Todd Schlachter, MingDe Lin, Jeffrey C. Weinreb, Ramesh Batra, et al.
European Radiology (2021). [Paper]

Spatial-Intensity Transform GANs for High Fidelity Medical Image-to-Image Translation
Clinton J. Wang, Natalia S. Rost, and Polina Golland
MICCAI: Medical Image Computing and Computer Assisted Intervention (2020), [Acc. Rate: 33%].
[Paper] [Oral] [Code]

Automated feature quantification of Lipiodol as imaging biomarker to predict therapeutic efficacy of conventional transarterial chemoembolization of liver cancer
Sophie Stark, **Clinton Wang**, Lynn Jeanette Savic, Brian Letzen, Isabel Schobert, Milena Miszczuk, Nikitha Murali, Paula Oestmann, Bernhard Gebauer, MingDe Lin, James Duncan, et al.
Nature Scientific Reports (2020). [Paper]

A probabilistic approach for interpretable deep learning in liver cancer diagnosis
Clinton J. Wang, Charlie A. Hamm, Brian S. Letzen, and James S. Duncan
SPIE Medical Imaging (2019). [Paper] [Oral]

Deep learning for liver tumor diagnosis part II: interpretable deep learning to characterize tumor features
Clinton J. Wang*, Charlie A. Hamm*, Lynn J. Savic, Marc Ferrante, Isabel Schobert, Todd Schlachter, MingDe Lin, Jeffrey C. Weinreb, James S. Duncan, Julius Chapiro, and Brian Letzen
European Radiology (2019). [Paper]

Deep learning for liver tumor diagnosis part I: development of a convolutional neural network classifier for multi-phasic MRI
Charlie A. Hamm*, **Clinton J. Wang***, Lynn J. Savic, Marc Ferrante, Isabel Schobert, Todd Schlachter, MingDe Lin, James S. Duncan, Jeffrey C. Weinreb, Julius Chapiro, and Brian Letzen
European Radiology (2019). [Paper]

The Role of Artificial Intelligence in Interventional Oncology: A Primer
Brian Letzen, **Clinton J. Wang**, and Julius Chapiro
Journal of Vascular and Interventional Radiology (2019). [Paper]

Slowing of contractile kinetics by myosin-binding protein C can be explained by its cooperative binding to the thin filament
Clinton Wang, Jonas Schwan, and Stuart G Campbell
Journal of Molecular and Cellular Cardiology (2016). [Paper]

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Workshops and Preprints

Approximate Discretization Invariance for Deep Learning on Neural Fields
Clinton J. Wang and Polina Golland
NeurIPS Workshop on Symmetry and Geometry in Neural Representations (2022). [Paper]

High Fidelity Medical Image-to-Image Translation with Spatial-Intensity Transforms
Clinton J. Wang, Natalia S. Rost, and Polina Golland
MIT-MGB AI Cures Conference (2022). [Poster]

Automatic Segmentation of the Placenta in BOLD MRI Time Series
S. Mazdak Abulnaga, Sean Young, Katherine Hobgood, Eileen Pan, **Clinton J. Wang**, P. Ellen Grant, Esra Abaci Turk, and Polina Golland.
Medical Image Computing and Computer Assisted Intervention PIPPI Workshop (2022). [Paper] [Code]

Academic Service

Program Committee, Medical Imaging Meets NeurIPS Workshop	2022
Reviewer, NeurIPS: Neural Information Processing Systems	2022
Reviewer, MICCAI: Medical Image Computing and Computer Assisted Intervention	2021-2022

Teaching and Mentorship

Teaching Assistant, MIT	2021
6.819/6.869: Advances in Computer Vision. Prof. Bill Freeman and Phillip Isola	
Undergraduate Mentor, MIT Undergraduate Research Opportunities Program	2020

Awards

Takeda Fellowship	2021-2022
Siebel Foundation Scholar	2020
Department of Biomedical Engineering Prize (Yale)	2015
Tau Beta Pi Engineering Honor Society (Yale)	2015
International Biology Olympiad (silver medalist)	2009

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Invited Talks

Boston Medical Imaging Workshop — Oct. 2022
Robust counterfactual visualization with spatial-intensity transforms

MIT-Takeda Presentation Series — Sept. 2022
Identifying radiological biomarkers with generative models

Leadership Roles

Graduate Student Advisory Group for Engineering (GradSAGE), MIT — 2019–2021

Advised the Dean of the School of Engineering on policies and initiatives for graduate students. Developed and organized leadership workshops, a leadership minor, and a leadership certificate program.

Controller, Sidney-Pacific Graduate Residence — 2019–2021

Managed internal budgeting, reimbursements, accounting, and financial reporting for MIT's largest graduate dormitory (houses 749 students).

Interests

Music composition (classical): won Honorable Mention (2012) and was finalist (2013) at ASCAP Morton Gould Young Composer Awards

Graphic design: 2nd place in ACA Infographic Contest at Yale Institution for Social and Policy Studies (2013); production & design editor at *Yale Daily News*

Languages: Mandarin (advanced), German (basic), French (basic)