

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%], Oral. [\[Paper\]](#) [\[Project\]](#) [\[Code\]](#)

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). [\[Paper\]](#)

Workshops

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). [\[Paper\]](#) [\[Code\]](#)

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

Reviewer, [Medical Image Analysis \(MedIA\)](#) 2022

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

Invited Talks

Boston Medical Imaging Workshop <i>Robust counterfactual visualization with spatial-intensity transforms</i>	Oct. 2022
MIT-Takeda Presentation Series <i>Identifying radiological biomarkers with generative models</i>	Sept. 2022

Leadership Roles

Graduate Student Advisory Group for Engineering (GradSAGE), MIT 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.	2019–2021
Controller, Sidney-Pacific Graduate Residence Managed internal budgeting, reimbursements, accounting, and financial reporting for MIT's largest graduate dormitory (houses 749 students).	2019–2021

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)