Tzu-Ming Harry Hsu

徐子旻

Ph.D. in AI and Healthcare, MIT h@stmharry.io
Entrepreneur, Scholar, Writer, Speaker, and Diver +1 617-803-7785 / +886 928-494-198

- Expert in technologies including AI and blockchain, with the mission to scale human civilization and liberate humanity from repetitive labor.
- Emerging entrepreneur with extensive experience in fundraising ($1MM+ USD raised), team leadership (20+ employees), and product building (3+ products to the market).
- Taiwan-born, US-educated innovator seeking to elevate Taiwan's role as a global engineering powerhouse and promoting a culture of rapid iterative innovation.
- Ocean lover with an AIDA 3-star free-diving certification and an SDI open water scuba diving certification.

Education

Massachusetts Institute of Technology — 2020 – 2022
Ph.D., Computer Science — Cambridge, MA

- Advisor: Peter Szolovits
- Dissertation: Effective Modeling of Medical Imaging Tasks with Constrained Data
- Research Areas: Computer Vision, Federated Learning, and Machine Learning for Healthcare.

Massachusetts Institute of Technology — 2017 – 2020
Master's (S.M.), Electrical Engineering and Computer Science — Cambridge, MA

- Advisors: Peter Szolovits / Fadel Adib
- Thesis: Automatic Longitudinal Assessment of Tumor Responses
- Research Areas: Computer Vision, Machine Learning, Wireless Signal, and Signal Processing.

National Taiwan University — 2011 – 2016
Bachelor (B.S.), Physics; and Bachelor (B.S.E.), Electrical Engineering — Taipei, Taiwan

- Grade: GPA: 3.99/4.00, Class Rank: 1/190

Professional Experience

CodeGreen Labs PBC — 2023 – 2024
Co-founder and Chief Technology Officer (CTO) — Boston / Taipei

Building decentralized software solutions that empower climate-conscious investors and enable funding for initiatives aligned with the UN's 2030 Agenda.

- Rapid Growth: Achieved $1MM USD annual revenue with 10 team members.
- Extensive Partnerships: Established numerous partnerships with Microsoft, the Global Blockchain Business Council, the Gold Standard, the SDG Data Alliance, and PVBLIC, among others.
- Integrated Approach: Formed a collaborative team of top professionals from climate, finance, and software fields to drive innovation.
- Crossing Difficult Gaps: Developed decentralized systems with strong auditability, regulatory compliance, and interoperability within existing ecosystems.

Hashgreen Labs — 2022 – 2023
Co-founder and Chief Technology Officer (CTO) — Boston / Taipei

Driving real-world impact with green blockchain technology, leveraging smart contracts and programmable data to solve critical problems.

- Capacity Building: Raised over $1MM USD in capital and led team growth from inception to 20 employees with robust hiring and review systems.
- Project Delivery: Secured and delivered projects for clients including the World Bank and Chia Network.
- Breakthrough Technology: Led development of decentralized finance protocols including a DEX and AMM, achieving an early milestone on the Chia blockchain.

International Academia of Biomedical Innovation Technology 2021 – Present
Consultant and Convener Taipei, Taiwan

Driving innovation in biomedical technology through interdisciplinary collaboration, industry partnerships, and advanced training programs.

- Contributed to a community of 50+ members, supporting 8+ academic projects and 15+ publications in leading venues.
- Led a dental AI research team in collaboration with National Taiwan University Hospital.
- Co-organized demo events with 100+ participants to promote public education and awareness.

Massachusetts Institute of Technology 2018 – 2022
Research Assistant Cambridge, MA

Pioneering new frontiers in medicine and AI through publication, peer review, and collaboration with leading organizations.

- Published 14 conference articles, 5 journal articles, one U.S. patent, and two degree theses.
- Served as a peer reviewer for 8 conferences and journals, reviewing 34 articles.
- Received media coverage from CBS, Engadget, TechCrunch, and MIT News.
- Collaborated with Google, Takeda Pharmaceutical, and Beth Israel Deaconess Medical Center.
- Awarded scholarships totaling 4 years in duration.

WorldQuant 2021 – 2021
Data Science Intern Taipei, Taiwan

A quantitative investment firm that uses advanced technology and innovative research to analyze and forecast market trends.

- Researched and optimized market front-running strategies, improving market correlation by +1.5%.

Google 2019 – 2020
Student Researcher and Software Engineer Intern Seattle, WA

Driving progress in Mobile Vision and Medical AI research groups through open-source research and development.

- Conducted research on deep federated learning and contributed to a rapidly growing field.
- Published 2 peer-reviewed papers on behalf of the company.
- Developed a scalable library for large-scale machine learning experiments across thousands of machines and 1000+ GPUs.
- Open-sourced research code and datasets for broader community use.

Brigham and Women's Hospital and Beth Israel Deaconess Medical Center 2019 – 2020
Research Trainee Boston, MA

Research and deployment in clinical AI workflows.

- Published three research articles on liver tumor assessment, COVID-19 risk prediction, and pancreatic cancer assessment.
- Developed and implemented an AI patient screening pipeline in PACS workflows, screening 1,000+ patients.
- Managed shared computation resources for a 10+ member research unit.

Multimedia and Machine Learning Lab, Academia Sinica — 2014 – 2016
Student Researcher — Taipei, Taiwan

Research on heterogeneous and semi-supervised domain adaptation for visual classification.

- Published 3 peer-reviewed papers and presented findings at top conferences and workshops.

Access IC Lab — 2014 – 2015
Student Researcher — Taipei, Taiwan

Studied photoplethysmographic signals and developed motion-artifact reduction algorithms.

- Obtained 10th place in the 2015 IEEE Signal Processing Cup for heart-rate estimation.

Laboratory for Applied Logic and Computation in System Design (ALCom Lab) — 2013 – 2014
Student Researcher — Taipei, Taiwan

Developed mathematical models for analog neural networks in collaboration with TSMC.

Leadership Experiences

Federation of Taiwanese Student Associations in New England (FTSANE) — 2019 – 2020
Activities Officer — Boston, MA

MIT Taiwanese Student Association — 2018 – 2019
President — Boston, MA

- Led coordination of 20+ events for a diverse community of over 100 members.
- Organized 10+ career workshops and helped plan 10+ national holiday celebrations.

Awards & Honors

Departmental Valedictorian (First Place at Graduation) — 2016
Department of Electrical Engineering, National Taiwan University — Taipei, Taiwan

- Placed 1st among 200 classmates across all courses.

Silver Medal — 2015
Altera Innovate Asia FPGA Design Competition — Taipei, Taiwan

- Placed 2nd among 20 international teams.
- Designed a product named EZBud with integrated algorithms that modulate music based on user sporting statistics.

Gold Medal / Overall Winner — 2011
42nd International Physics Olympiad (IPhO) — Bangkok, Thailand

- Represented Taiwan and placed 1st in theory, experiment, and combined rankings among 400+ participants from 80+ countries.

Gold Medal / Experiment Winner — 2011
12th Asian Physics Olympiad (APhO) — Tel Aviv, Israel

- Placed 1st in the experiment section among 100+ participants.

Gold Medal — 2010
41st International Physics Olympiad (IPhO) — Zagreb, Croatia

Gold Medal / Experiment Winner — 2010
11th Asian Physics Olympiad (APhO) — Taipei, Taiwan

- Placed 1st in the experiment section among 100+ participants.

Gold Medal — 2008
5th International Junior Science Olympiad (IJSO) — Changwon, Korea

Academic Publications

Artificial Intelligence to Assess Dental Findings from Panoramic Radiographs–A Multinational Study — 2025
arXiv

Yin-Chih Chelsea Wang, Tsao-Lun Chen, Shankeeth Vinayahalingam, Tai-Hsien Wu, Chu Wei Chang, Hsuan Hao Chang, Hung-Jen Wei, Mu-Hsiung Chen, Ching-Chang Ko, David Anssari Moin, Bram van Ginneken, Tong Xi, Hsiao-Cheng Tsai, Min-Huey Chen, Tzu-Ming Harry Hsu, Hye Chou

Intra-Oral Scan Segmentation Using Deep Learning — 2023
BMC Oral Health — Cited by 17

Shankeeth Vinayahalingam, Steven Kempers, Julian Schoep, Tzu-Ming Harry Hsu, David Anssari Moin, Bram van Ginneken, Tabea Flugge, Marcel Hanisch, Tong Xi

Positional Assessment of Lower Third Molar and Mandibular Canal Using Explainable Artificial Intelligence — 2023
Journal of Dentistry — Cited by 15

Steven Kempers, Pieter van Lierop, Tzu-Ming Harry Hsu, David Anssari Moin, Stefaan Berge, Hossein Ghaeminia, Tong Xi, Shankeeth Vinayahalingam

Emulating Clinical Diagnostic Reasoning for Jaw Cysts with Machine Learning — 2022
Diagnostics — Cited by 12

Balazs Feher, Ulrike Kuchler, Falk Schwendicke, Lisa Schneider, Jose Eduardo Cejudo Grano de Oro, Tong Xi, Shankeeth Vinayahalingam, Tzu-Ming Harry Hsu, Janet Brinz, Akhilanand Chaurasia

Methods and Apparatus for Radio Frequency Sensing in Diverse Environments — 2022
US Patent 11,308,291

Unsoo Ha, Junshan Leng, Alaa Khaddaj, Yunfei Ma, Tzu Ming Hsu, Zexuan Zhong, Fadel Adib

Effective Modeling in Medical Imaging with Constrained Data — 2022
PhD Thesis, Massachusetts Institute of Technology

Tzu-Ming Harry Hsu

Artificial Intelligence to Assess Body Composition on Routine Abdominal CT Scans and Predict Mortality in Pancreatic Cancer – A Recipe for Your Local Application — 2021
European Journal of Radiology — Cited by 40

Tzu-Ming Harry Hsu, Khoschy Schawkat, Seth J Berkowitz, Jesse L Wei, Alina Makoyeva, Kaila Legare, Corinne DeCicco, S Nicolas Paez, Jim SH Wu, Peter Szolovits

Visceral Adiposity and Severe COVID-19 Disease: Application of an Artificial Intelligence Algorithm to Improve Clinical Risk Prediction — 2021
Open Forum Infectious Diseases — Cited by 22

Alexander Goehler, Tzu-Ming Harry Hsu, Jacqueline A Seiglie, Mark J Siedner, Janet Lo, Virginia Triant, John Hsu, Andrea Foulkes, Ingrid Bassett, Ramin Khorasani, Deborah J Wexler, Peter Szolovits, James B Meigs, Jennifer Manne-Goehler

Adversarial Contrastive Pre-Training for Protein Sequences — 2021
arXiv Preprint arXiv:2102.00466 — Cited by 9

Matthew McDermott, Brendan Yap, Harry Hsu, Di Jin, Peter Szolovits

DeepOPG: Improving Orthopantomogram Finding Summarization with Weak Supervision — 2021
Medical Image Computing and Computer Assisted Intervention (MICCAI 2021) — Cited by 4
Tzu-Ming Harry Hsu, Yin-Chih Chelsea Wang

Methods and Apparatus for Radio Frequency Sensing in Diverse Environments — 2020
US Patent 10,872,209 — Cited by 11
Unsoo Ha, Junshan Leng, Alaa Khaddaj, Yunfei Ma, Tzu Ming Hsu, Zexuan Zhong, Fadel Adib

Three-Dimensional Neural Network to Automatically Assess Liver Tumor Burden Change on Consecutive Liver MRIs — 2020
Journal of the American College of Radiology — Cited by 18
Alexander Goehler, Tzu-Ming Harry Hsu, Ronilda Lacson, Isha Gujrathi, Raein Hashemi, Grzegorz Chlebus, Peter Szolovits, Ramin Khorasani

Chexpert++: Approximating the Chexpert Labeler for Speed, Differentiability, and Probabilistic Output — 2020
Machine Learning for Healthcare Conference (MLHC 2020) — Cited by 38
Matthew BA McDermott, Tzu Ming Harry Hsu, Wei-Hung Weng, Marzyeh Ghassemi, Peter Szolovits

Automatic Longitudinal Assessment of Tumor Responses — 2020
PhD Thesis, Massachusetts Institute of Technology — Cited by 3
Tzu-Ming Harry Hsu

Baselines for Chest X-Ray Report Generation — 2020
Machine Learning for Health (ML4H) Workshop, NeurIPS 2020 — Cited by 74
William Boag, Tzu-Ming Harry Hsu, Matthew McDermott, Gabriela Berner, Emily Alesentzer, Peter Szolovits

Federated Visual Classification with Real-World Data Distribution — 2020
European Conference on Computer Vision (ECCV 2020) — Cited by 226
Tzu-Ming Harry Hsu, Hang Qi, Matthew Brown

Measuring the Effects of Non-Identical Data Distribution for Federated Visual Classification — 2019
arXiv Preprint arXiv:1909.06335 — Cited by 1334
Tzu-Ming Harry Hsu, Hang Qi, Matthew Brown

Transfer Neural Trees: Semi-Supervised Heterogeneous Domain Adaptation and Beyond — 2019
IEEE Transactions on Image Processing — Cited by 18
Wei-Yu Chen, Tzu-Ming Harry Hsu, Yao-Hung Hubert Tsai, Ming-Syan Chen, Yu-Chiang Frank Wang

Clinically Accurate Chest X-Ray Report Generation — 2019
Machine Learning for Healthcare Conference (MLHC 2019) — Cited by 317
Guanxiong Liu, Tzu-Ming Harry Hsu, Matthew McDermott, Willie Boag, Wei-Hung Weng, Peter Szolovits, Marzyeh Ghassemi

Unsupervised Multimodal Representation Learning Across Medical Images and Reports — 2018
Machine Learning for Health (ML4H) Workshop, NeurIPS 2018 — Cited by 50
Tzu-Ming Harry Hsu, Wei-Hung Weng, Willie Boag, Matthew McDermott, Peter Szolovits

Learning Food Quality and Safety from Wireless Stickers — 2018
Proceedings of the 17th ACM Workshop on Hot Topics in Networks (HotNets 2018) — Cited by 85
Unsoo Ha, Yunfei Ma, Zexuan Zhong, Tzu-Ming Hsu, Fadel Adib

3D-Aware Scene Manipulation via Inverse Graphics — 2018
Advances in Neural Information Processing Systems (NeurIPS 2018) — Cited by 316
Shunyu Yao, Tzu Ming Hsu, Jun-Yan Zhu, Jiajun Wu, Antonio Torralba, Bill Freeman, Josh Tenenbaum

Transfer Neural Trees for Heterogeneous Domain Adaptation — 2016
European Conference on Computer Vision (ECCV 2016) — Cited by 75
Wei-Yu Chen, Tzu-Ming Harry Hsu, Yao-Hung Hubert Tsai, Yu-Chiang Frank Wang, Ming-Syan Chen

Connecting the Dots Without Clues: Unsupervised Domain Adaptation for Cross-Domain Visual Classification — 2015
International Conference on Image Processing (ICIP 2015) — Cited by 2
Wei-Yu Chen, Tzu-Ming Harry Hsu, Cheng-An Hou, Yi-Ren Yeh, Yu-Chiang Frank Wang

Unsupervised Domain Adaptation with Imbalanced Cross-Domain Data — 2015
International Conference on Computer Vision (ICCV 2015) — Cited by 90
Tzu Ming Harry Hsu, Wei Yu Chen, Cheng-An Hou, Yao-Hung Hubert Tsai, Yi-Ren Yeh, Yu-Chiang Frank Wang