

Hang Jung Ling, Ph.D. student

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Education

- 2021 – **Ph.D.**, CREATIS, INSA Lyon, France.
Thesis title: *Physics-guided neural networks for intraventricular vector flow mapping by color Doppler*.
Supervisors: Dr. Damien Garcia, Prof. Olivier Bernard, and MD-PhD Pierre-Yves Courand
- 2020 – 2021 **M.Sc. Medical Imaging, Signals and Systems**, Université Claude Bernard Lyon 1, France.
- 2018 – 2021 **M.Sc. (Diplôme d'ingénieur) Electrical Engineering**, INSA Lyon, France. (First Class Honours)
- 2016 – 2018 **Preparatory class, ASINSA**, INSA Lyon, France.

Research Publications

Journal Articles

- 1 **H. J. Ling**, S. Bru, J. Puig, F. Vixège, S. Mendez, F. Nicoud, P.-Y. Courand, O. Bernard, and D. Garcia, “Physics-Guided Neural Networks for Intraventricular Vector Flow Mapping,” *IEEE Trans. Ultrason. Ferroelectr. Freq. Control*, pp. 1–1, 2024.
- 2 J. Puig, D. Friboulet, **H. J. Ling**, F. Varray, M. Mougharbel, J. Porée, J. Provost, D. Garcia, and F. Millioz, “Boosting Cardiac Color Doppler Frame Rates with Deep Learning,” *IEEE Trans. Ultrason. Ferroelectr. Freq. Control*, pp. 1–1, 2024.
- 3 **H. J. Ling**, O. Bernard, N. Ducros, and D. Garcia, “Phase Unwrapping of Color Doppler Echocardiography using Deep Learning,” *IEEE Trans. Ultrason. Ferroelectr. Freq. Control*, vol. 70, no. 8, pp. 810–820, Aug. 2023.

Conference Proceedings

- 1 **H. J. Ling**, N. Painchaud, P.-Y. Courand, P.-M. Jodoin, D. Garcia, and O. Bernard, “Extraction of Volumetric Indices from Echocardiography: Which Deep Learning Solution for Clinical Use?” In *Functional Imaging and Modeling of the Heart*, 2023, pp. 245–254.



Presentations

Oral



- Sep. 2023 **Intraventricular Vector Flow Imaging using Physics-Informed Deep Learning**
IEEE International Ultrasonics Symposium, Montreal, Canada
- June 2023 **Intraventricular Vector Flow Imaging using Physics-Informed Deep Learning**
Artimino Conference on Medical Ultrasound Technology, Artimino, Italy
- Extraction of volumetric indices from echocardiography— which deep learning solution for clinical use?**
Functional Imaging and Modeling of the Heart, Lyon, France
- Oct. 2022 **Dealiasing of color Doppler echocardiography using deep learning**
IEEE International Ultrasonics Symposium, Venice, Italy

Presentations (continued)

Poster


- Mar. 2024  Physics-Guided Neural Networks for Intraventricular Vector Flow Mapping
Colloque Français d'Intelligence Artificielle en Imagerie Biomédicale, Grenoble, France
- Oct. 2022  Reaching intra-observer variability in 2-D echocardiographic image segmentation with a simple U-Net architecture
IEEE International Ultrasonics Symposium, Venice, Italy

Skills



- Languages  Chinese, English, French, and Malay.
- Coding  C++, HTML/CSS, Java, Matlab, Python, and PyTorch

Miscellaneous Experience



Reviews

- 2023 – ····  **Reviewer**, IEEE Transactions on Ultrasonics, Ferroelectrics, and Frequency Control.

Service and Volunteer

- June 2023  **Conference organizing committee**, Functional Imaging and Modeling of the Heart.
- Apr. 2023  **Summer school organizing committee & Hands-on sessions' moderator**, Deep Learning for Medical Imaging summer school.

Honors and Awards

- 2021  3-year scholarship for doctoral study
MEGA doctoral school (ED 162), INSA Lyon, France
- 2015  6-year scholarship for bachelor's and master's degree studies abroad
Public Service Department or Jabatan Perkhidmatan Awam (JPA), Malaysia