Jason Li

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Education

ETH Zurich / University of Zurich, MS in Neural Systems and Computation — Sept 2023 – May 2025 (anticipated)
Institute of Neuroinformatics, Zurich 8057, Switzerland

- **Thesis:** Investigating the Hippocampo-Cortical Dynamics of Schematic Learning using Artificial Neural Networks
  Supervisors: Dr. Benjamin Grewe (ETH Zurich, Zurich) and Dr. Louis Kang (RIKEN, Japan)

Boston University, BA in Computer Science & minor in Biology — Sept 2018 – Dec 2021

- Cum. GPA: 3.6/4.0

Experience

International Program Associate, RIKEN Center for Brain Sciences — Wako/Tokyo, Japan
Supervisors: Prof. Benjamin Grewe & Dr. Louis Kang — *Sept 2024 – Present*

- Writing Master's thesis externally at RIKEN under the direct supervision of Dr. Louis Kang

Machine Learning Scientist, Boston University School of Public Health — Boston, MA, USA
PIs: Profs. Chris Gill & Margrit Betke — *Feb 2021 – Sept 2023*

- Performed ML and software engineering on various Deep Learning/Computer Vision pipelines with the goal of improving pneumonia diagnoses from point-of-care chest and lung ultrasounds
- Models used included GANs, UNets, Transformers

Machine Perception Intern, Artificio.org — remote, based in Hong Kong
Advisors: Drs. Arturo Deza & Colin Conwell — *Dec 2022 – Apr 2023*

- Research towards understanding 1.) human affect/aesthetic valence through the analysis of DNNs (OpenCLIP, ViT, etc.) via layer-/neuron-wise activations, network predictivity, etc and 2.) philosophical implications of greater use of Foundational Models (e.g., GPT, Gemini, etc.) in domains like artistry, ownership, and governance

Machine Learning Scientist, European Organization for Nuclear Research (CERN) — Geneva, Switzerland
Advisor: Dr. Maurizio Pierini — *Jan 2022 – Sept 2022*

- Worked on a Graph Neural Network based algorithm for end-to-end particle reconstruction and identification from calorimeter deposits post collision

Research Assistant, Boston University Physics/CMS Group — Boston, MA, USA
PI: Dr. Lawrence Sulak — *Nov 2019 – Dec 2021*

- Helped finish software for an upgrade to CERN CMS Hi-Granularity Calorimeter data acquisition system

Visiting Scholar in Biomedical Imaging/Deep Learning, UCSF Radiology — San Francisco, CA, USA
Advisors: Dr. Peder Larson & Abhejit Rajagopal — *May 2021 – Dec 2021*

- Implemented Online Hard Example Mining tool in PyTorch Lightning to improve Renal Cell Carcinoma classification; wrote custom dataloaders and samplers to improve class balance

Publications

L. Demi, U. Khan, R. Thompson, **J. Li**, L.P. Etter, I. Camelo, R.C. Pieciak, I. Castro-Aragon, B. Setty, C. Gill, M. Betke. "FLUEnT: Transformer for detecting lung consolidations in videos using fused lung ultrasound encodings." *Computers in Biology and Medicine*, (2024).

R. Thompson, U. Khan, **J. Li**, L.P. Etter, I. Camelo, R.C. Pieciak, I. Castro-Aragon, B. Setty, C. Gill, L. Demi, M. Betke. "Investigating effective transfer of deep learning models from adults to children for lung ultrasound data analysis." *In 2023 IEEE International Ultrasonics Symposium (IUS). IEEE*, (2023). doi:10.1109/IUS51837.2023.10306962

R. Thompson, U. Khan, **J. Li**, L.P. Etter, I. Camelo, R.C. Pieciak, I. Castro-Aragon, B. Setty, C. Gill, L. Demi, M. Betke. "Effectiveness of transferring ultrasound deep learning models from adults to pediatrics for frame based pneumonia classification." *The Journal of the Acoustical Society of America*, (2023). doi: 10.1121/10.0018616

Posters/Abstracts

Concordance between Chest X Ray (CXR) and Point of Care Ultrasound (POCUS) Findings in Children Diagnosed with RSV Infection by Nasopharyngeal RT-PCR: The Zambia Experience., *9th Congress of the European Academy of Paediatric Societies* Oct 2022

Ingrid Camelo, Rachel Pieciak, Ilse Castro-Aragon, Bindu Setty, Margrit Betke, Lauren Etter, ***Jason Li***, Russell Thompson, Christopher Gill

Artificial intelligence-based brightness profiles pattern recognition to detect pediatric pneumonia from lung ultrasound images, *Society for Pediatric Radiology* Apr 2022

Jason Li, Margrit Betke, Christopher Gill, Russell Thompson, Kaihong Wang, Lauren Etter, Ingrid Camelo, Hailey Chang, Bindu Setty, Ilse Castro, Rachel Pieciak

Using Artificial Intelligence to Interpret Pneumonia CXR (chest X ray) Findings in Children with a Phone Application Platform, *Society for Pediatric Radiology* Apr 2022

Russell Thompson, Rachel Pieciak, Christopher Gill, ***Jason Li***, Kaihong Wang, Lauren Etter, Ingrid Camelo, Bindu Setty, Ilse Castro, Hailey Chang, Margrit Betke,

A Test Beam & Cosmic Facility to Evaluate, Calibrate, and Monitor HGCAL Hexaboards, *CERN Large Hadron Collider Student Conference 2021* Nov 2021

Jason Li, Nick Adams, Hasung Song, Mikhail Sharov, Lawrence Sulak

NIM+: an FPGA-based Replacement to Legacy NIM in Test Beams, *CERN Physics and Radiobiology Experimental Beam Tests Workshop* Feb 2021

Chris Cosby, ***Jason Li***, Mikhail Sharov, Y. Situ, Hasung Song, Lawrence Sulak

Skills and Technologies

Programming Languages: Python, R, MATLAB, C, Java, Bash

Software/Frameworks: PyTorch, PyTorch Lightning, TensorFlow, Scikit-Learn, OpenCV, Git/Github, LaTeX

Spoken Languages: English, Cantonese, Mandarin, French, German (B1), Japanese (JLPT N5)

Extracurriculars

Freelance Photographer (2018-present): participated in paid shoots; photographs accessible via links below
https://www.instagram.com/jasonli12/ | https://jasonfli12.myportfolio.com
Proficient with Adobe Lightroom and Photoshop

AI + Art volunteer, ETH Zurich AI Center (2023-2024): with ex-Cabaret Voltaire curator Dr. Adrian Notz, helped explore the increasing role and usage of AI in art and its implications for the future

BostonHacks Organizer, former Head of Logistics (2018-2021)

Interests: Hiking/camping, triathlons, rock climbing, badminton, photography, piano, cooking & baking, traveling (44 countries visited across 6 continents)