Webpage: <https://github.com/greenelab/lab-website-template>

Page1: News

– Welcome

– News (follow similar format that: <https://bispl.weebly.com/>)

Welcome message:

**Welcome to the Math+ML+X Lab!**

Our research group focuses on the intersection of mathematics, machine learning, and real-world applications (X). We aim to bridge theory and practice by developing new mathematical frameworks and advancing machine learning methodologies, while applying them to solve practical challenges across various domains. Whether it's theoretical breakthroughs or impactful solutions, our goal is to explore innovative ideas that push the boundaries of what’s possible. We are passionate about fostering interdisciplinary collaboration and making meaningful contributions to both academia and industry!

News!

We are excited to launch the Math+ML+X Seminar Series, a new platform dedicated to exploring the synergy between mathematics, machine learning, and diverse real-world applications (X). This seminar series brings together researchers at all career stages to share innovative ideas, foster collaboration, and showcase the latest advancements. Join us to dive into topics at the intersection of theory and practice!

**Page2: Members (see folder for photos )**

**PI:**



**PhD students:**

**Current Visitors and Collaborators:**

Yining Zhao (ShanghaiTech University)

Yi Zhang (SUSTech)

Jiahao Huang (Imperial College London)

Yijun Yang (HKUST-GZ)

**Past Visitors:**

[2024] Mengqi (Mona) Shi (Tsinghua University) Working on DL for PDEs

[2024] Amer Essakine (ENS-Paris Saclay) Implicit Neural Representations

[2024] Rui Sun (CUHK) Working on Fairness

[2024] Xuan Zhou (CityU) Graphs and KANs

[2024] Haoran Li (Tsinghua University) Working on continuous nets for segmentation

[2024] Yizhen Chen (University of Cambridge) Working on Physics-Informed Models

[2024] Chaoyan Huang (CUHK) Working on PnP Methods

[2023] Surya Sathujoda (University of Cambridge) Working on Deep Learning for PDEs.

[2023] Ben Watkins (University of Cambridge) Working on PnP methods

[2023] Laurent Pin (Ecole Centrale de Nantes, France) Working on Graphs and Segmentation

[2023] Zihan Xu (University of Cambridge)Working on Physics Informed Models

[2023] Andrey Bryutkin (University of Cambridge) Working on Graph Transformers and PDEs

[2023] Jing Zou (UPoly HK) Working on Image Registration

[2022] Joy Cheng (University of Cambridge) Working on Triplet Surgical Recognition. [2022] Jean Prost (University of Bourdeaux) Working on HVAE for Image Restoration

[2022] Zhongying Deng (University of Surrey) Working on Semi-Supervised Semantic Segmentation

[2022] Sam Cheng (CityU) Working on Second Order Neural ODEs

[2022] Mickael Assaraf (ENS Paris-Saclay) Working on Geometric Deep Learning

[2021] Emma Wang (CUHK) Learning to Classify Mammograms

[2021] Wei Tang (CityU, HK) Medical Image Skeletonisation

[2021] Hugo Blanc (ENSTA-Paris) Graph based Semi-Supervised Classification for Hyperspectral data

[2020] Olivia Hu (Student in Mathematics, University of Cambridge). Plug-and-Play Algorithms for Super Resolution. Award Funding: Cambridge Summer Research in Mathematics Programme (SRIM, 2020) (Jointly Supervision with Kaixuan Wei)

[2020] Jiyang Du (Student in Mathematics, University of Cambridge). Plug-and-Play Algorithms for Super Resolution. Award Funding: Cambridge Summer Research in Mathematics Programme (SRIM, 2020) (Jointly Supervision with Jingwei Liang)

[2020] Zhuqing Li (City U, HK) Remote Sensing

[2020] Kaixuan Wei (Beijing Institute of Technology) Tuning-free Plug-and-Play Proximal Algorithm for Inverse Imaging Problems

[2017-2020] Alsaleh, Samar M. PhD Student in Computer Science, The George Washington University, USA. — Congrats for your graduation!

[2019] Jonathan Ang (University of Cambridge) Walking Deeper on Graphs: Learning Latent Representations Via DeepWalk Approach

[2019] Tao Wei (State University of New York)

[2019] Jianchao Zhang (City U, HK) Superpixels Segmentation

[2019] Timothée Schmoderer (l’INSA de Rouen) Joint Hybrid Variational Models

[2018] Caroline Zhu (University of Cambridge) Optical Flow

[2017] Daniel Heydecker (University of Cambridge) Variational Methods for Computational Photography

[2017] Georg Maierhofer (University of Cambridge) Variational Methods for Computational Photography

Page3: Publications (by time)

--preprint

--published

[J] Journal [c] Conference

The same as in including the figures: <https://angelicaiaviles.wordpress.com/publications/>

Page4: Teaching

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Page5: Github

<https://github.com/Math-ML-X>

Page6: Alumni

**PhD Thesis**

**[PhD Thesis, 2024] Liu, Lihao**. Advancing 3D Segmentation: Deep Learning Techniques for Video and Medical Imaging.

PhD Student in Applied Mathematics, University of Cambridge, UK. (Thesis Co-Supervisor Jointly with C. Schönlieb).

**Viva November 28th 2024. Committee: Ben Glocker and Mireia Crispin-Ortuzar**

**Post-graduation:**

**[PhD Thesis, 2021] Sellars, Philip**. Minimal Labels, Maximum Gain. Image Classification with Graph-Based Semi-Supervised Learning.

PhD Student in Applied Mathematics, University of Cambridge, UK. (Thesis Co-Supervisor Jointly with C. Schönlieb).

**Viva November 17th 2021. Committee: Xavier Bresson and Joan Lasenby**

**Post-graduation: ML Researcher @**[**Darktrace**](https://www.darktrace.com/en/)

**Master Thesis**

[Master Thesis, 2023] Sergio Calvo Ordoñez (Master Student — MPhil in Machine Learning, University of Cambridge). Breaking the Limits of Diffusion Models via Continuous Dynamical Systems. (Thesis Co-Supervisor Jointly with C. Schönlieb). **Post-graduation: University of Oxford for PhD.**

[Master Thesis, 2022] Yanqi (Joy) Cheng (Master Student Mathematics, University of Cambridge). Robust Deep Features for SurgicalAction Triplet Recognition. (Thesis Co-Supervisor Jointly with C. Schönlieb).

**Post-graduation: University of Cambridge for PhD.**

[Master Thesis, 2019] Marianne de Vriendt (Master Student Mathematics, University of Cambridge). Learning to Classify Medical Images with Minimal Supervision. **Post-graduation:** [**@Nabla, Paris**](https://www.nabla.com/en/) **Working in ML for Healthcare.**

Page7: Event

-MATH+ML+X Seminars

-Other