CS6208 : Advanced Topics in Artificial Intelligence
Graph Machine Learning

Administrative (Week 4)

Semester 2 2022/23

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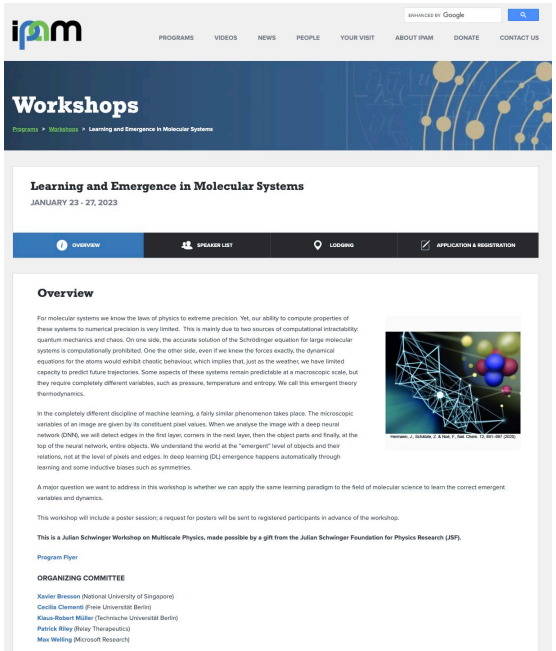
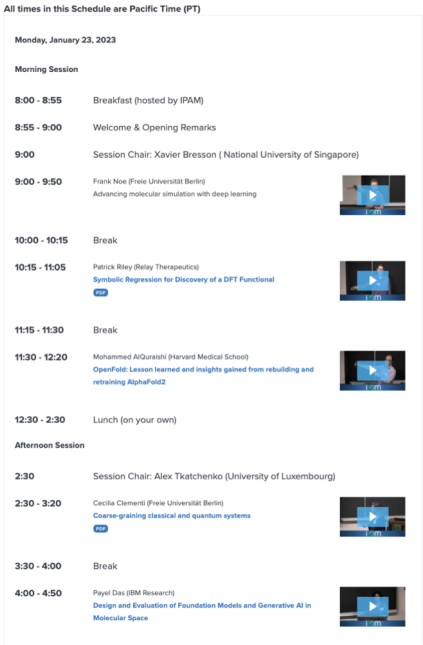
UCLA/IPAM workshop on "Learning and Emergence in Molecular Systems"

- Great workshop on deep learning, physics and chemistry !
- All talks (videos and slides) are available at http://www.ipam.ucla.edu/programs/workshops/learning-and-emergence-in-molecular-systems

2019



2023



Tentative Outline

- This module focuses on the foundations of graph machine learning.
  - Introduction to Graph Deep Learning
  - Introduction to Graph Science
  - Graph Analysis Techniques without Feature Learning
    - Graph clustering
    - Classification
    - Recommendation
    - Dimensionality reduction
    - Visualization
  - Shallow graph feature learning
- Graph Convolutional Networks (spectral and spatial)
- Benchmarking GNNs
- Graph Positional Encoding
- Graph ViT/MLP-Mixer
- Generative GNNs and biology
- Combinatorial optimization
- GNNs for Recommendation
- GNNs for knowledge graphs
- Theory of GNNs

Questions?