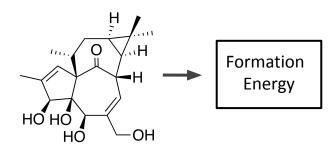


ASAP: Adaptive Hierarchical Graph Pooling

Ekagra Ranjan¹, <u>Soumya Sanyal²</u>, Partha Talukdar² ¹Indian Institute of Technology Guwahati, ²Indian Institute of Science Bangalore



• Deep Learning for Graph Level Prediction

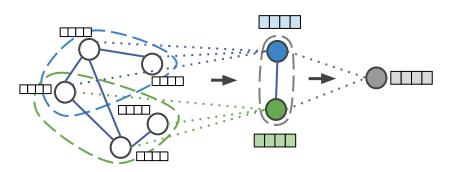


Molecular Property Prediction

Toxicity

Drug Classification

• Graph Pooling



Existing methods **trade-off** performance to increase scalability!

Can we learn an effective graph representation which is scalable?



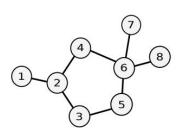
ASAP: Adaptive Hierarchical Graph Pooling

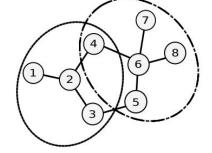
Ekagra Ranjan¹, <u>Soumya Sanyal²</u>, Partha Talukdar² ¹Indian Institute of Technology Guwahati, ²Indian Institute of Science Bangalore

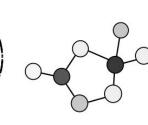


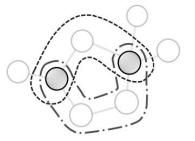
ASAP

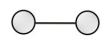
Poster #205 - ML8336











Input Graph

- Step 1 Cluster Membership
- Step 2 Cluster Scoring

Step 3 - Cluster Selection

Pooled Graph

Key attributes

- **Scalability** due to sparse formulation
- Effective node and edge Summarization
- Novel cluster **Selection** algorithm
- Achieves SOTA on graph classification

Github