

NIAC Day Breakout Session Outcomes

Session:

Facilitators:

Major Organizing Questions/Challenges

- State major research questions/challenges and how they could be NIAC projects

Major Question/Challenge	Who Should be Engaged?
Dynamic and Streaming Network Analysis	NIAC and partners
Operations and Representations on Combinatorially Complex Graphs	NIAC and partners
Hybrid Graph Data Analytics	NIAC and partners
Uncertainty Quantification and Propagation in Complex Networks	NIAC and partners
Pattern Recognition and Anomaly Detection in Complex Graphs	NIAC and partners

High-level Project Goals

- State the aggregated high-level goals for the projects in your Group (1 slide)

Area	Goal
Identifying proper graph data structures in application data	Robust partitioning methods over input data sources
Information theoretical methods	Proper suite of mathematical measures to understand networks in their functioning (e.g. diffusion, query)
Machine learning	Accurate link prediction and type classification (nodes, edges, subgraphs, etc.)
Scaling	Effective abstraction and compression of graph data

Implementation Strategy

- Outline your implementation strategy (what is needed, from whom, and how you will get it)

What	Who	How

Prioritization

- Given finite bandwidth, prioritize or categorize your projects (high, medium, or low)

Project	Priority
Compression of dynamic social media networks	
Activity and influence diffusion in complex organizational networks	
Pattern discovery and anomaly detection in streaming cybersecurity data	
Optimal hybrid graph structures for regulatory and metabolomic networks	