#192878 Intelligent Social Network Interventions to Augment Human Cognition for Bolstered Interdisciplinary Interactions in Project Teams

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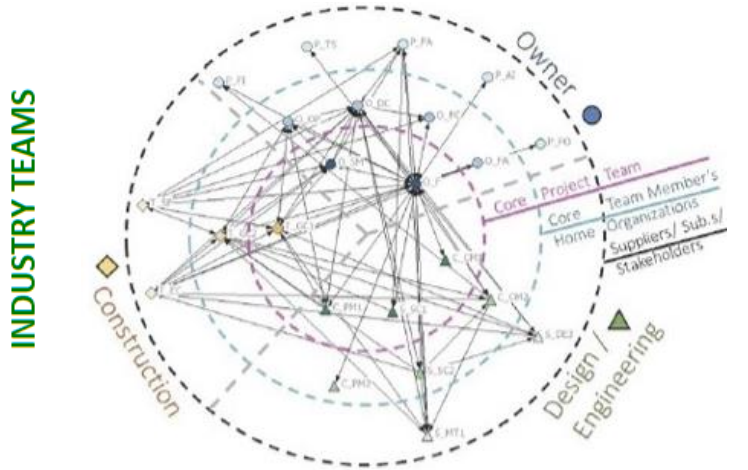
STUDENT TEAMS PROJECT CHARTER - MILESTONES TIMELINE

Goal: To augment human cognition and functioning of multiteam systems via machine learning enabled social network interventions to help individuals develop skills for future of work.

Survey, archival, emails, and meeting data:

- Three infrastructure projects (industry) teams
  - 600 – 6000 individual / Project duration: 1-3 years / 120 meetings recorded to date
- 25 student teams across domains (technical, social, hybrid)
  - 4-9 individuals / Project duration: 4-14 weeks / 85 meetings recorded to date



Progress addressing Future Technology

Goal: Automated extraction of project team tasks and communications.

- Team Meeting Recordings (G/A/Sentiment)
- Email Cleaning and SNA Preparation
  - +700.000 rows of email data
- Text Recognitions & Labeling for Task Types / Resolution Speed
  - Jaccard Similarity (New/Continuous from %82 to %96 accuracy)
- Annotator Bias
  - The same demographic groups (individuals in relation to the project task) tend to show similar bias in the annotation tasks (%83 to %96 accuracy)
- Automation of Network Topology Analyses

Progress addressing Future Work

Goal: Via social network interventions, help teams improve performance.

- Student engagement
  - ML to predict interaction from the first 10 minutes of team meetings
  - Speaking duration independent from: Gender, Background, Project Type.
- Developed metrics and algorithm to predict information bottlenecks in projects.
- Operationalized longitudinal surveys for team & project performance.
- COVID's Effect on Transaction Costs
- Network metrics and topology for complex and dynamic project/team functioning.

Progress addressing Future Workers

Goal: Via social network interventions, help individuals develop skills for complex project teams.

- Student Skill Development for Project Management
  - Charter and Video Training Module
- Developed and operationalized (pre/post surveys) and interventions relating to:
  - Teamwork skills
  - Network knowledge
  - Individual utility