

Visualizing Supply Chain Structures

CPSC 547 2020W1 - Project Pitch

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Project Origins



Introduction

- Multi-way dependencies can arise in supply chain product structures.
- E.g. Multiple Parts assembled on the same production line.

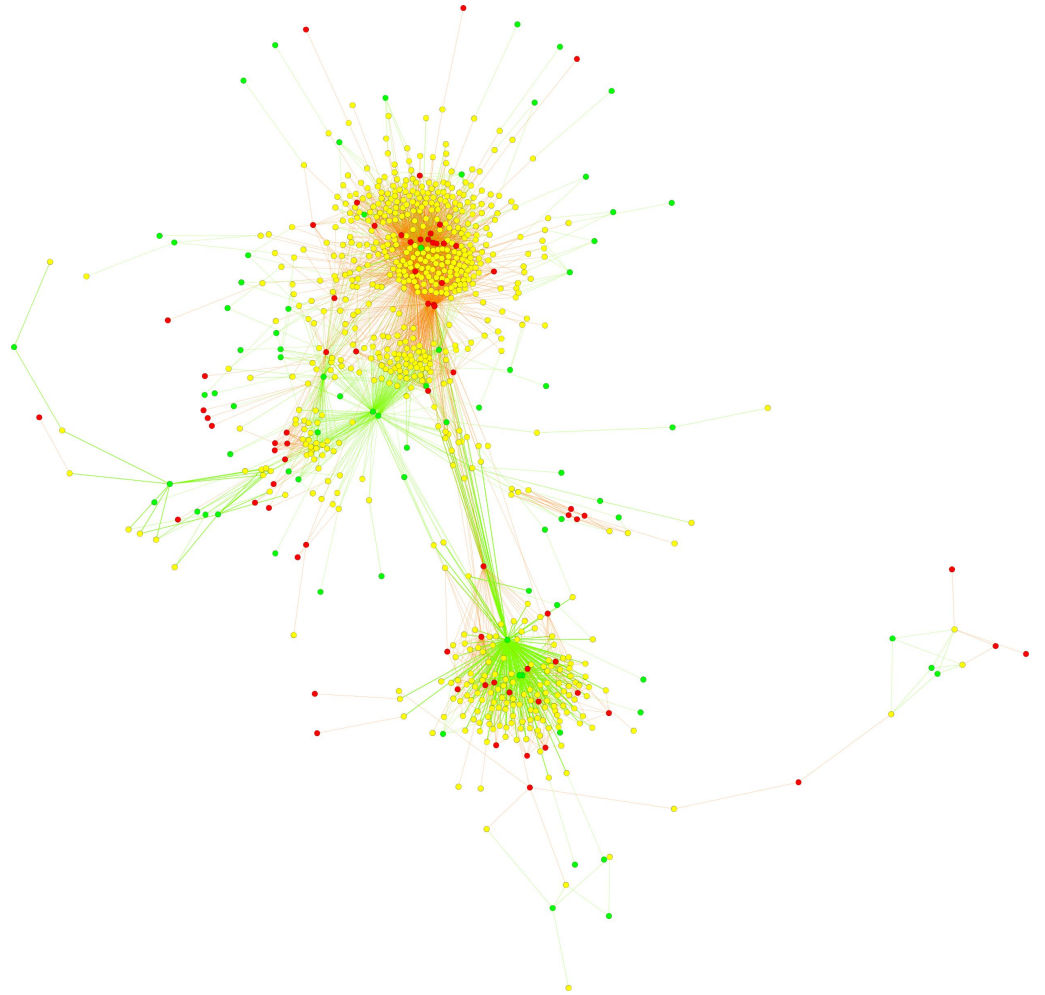


Introduction

- Kinaxis leverages parallel computation to schedule these (large) structures.
- The more separate structures a dataset contains, the faster the scheduling algorithm will be able to run.
- By extension, the fewer structures \Rightarrow each structure's size is large, which affects parallelization.



Sample Supply Chain Structure



Project Goals:

- 1) **Data Abstraction** - Reevaluate the visual and graphical representation of supply chain structures
 - a) Is there a better way to define and visualize these multi-way dependencies?
 - i) Current implementation was not developed with the intent of info vis
 - b) **Summarize** - What is the appropriate way to aggregate the utilization metrics over time?
- 2) Implement an interactive visualization tool that displays:
 - a) **Summarize** - Graph contractions (data preprocessing)
 - b) **Summarize** - Possible dynamics of dependencies over time
 - c) **Identify, Compare** - The candidate set of nodes/edges for removal

If you're interested in:

- Algorithmic supply chain management,
- Learning more about modelling and visualizing huge networks,
- Trying to solve a problem affecting industrial scale supply chains,

Reach out to me: atrostan@cs.ubc.ca

Thank you!

