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 → 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!