

# SECOND BRAIN

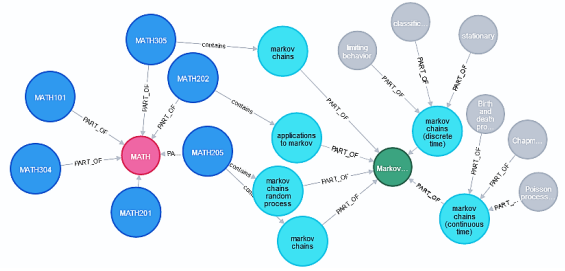
## KNOWLEDGE MANAGEMENT & EXPLORATION

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### COURSE LEVEL

#### Pre-requisite Explanation

This dynamic pre-requisite roadmap explains the pre-requisite of courses with concepts and their relationships extracted from the syllabus. It assists students to understand why certain courses need to be taken before enrolling in advanced courses from the perspective of the inter-knowledge dependencies, thus helping them to design learning paths. It also contributes to syllabus and curriculum design, especially for interdisciplinary courses.



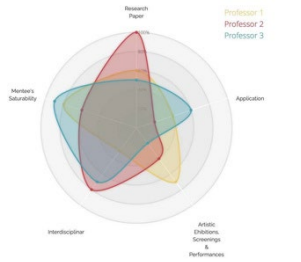
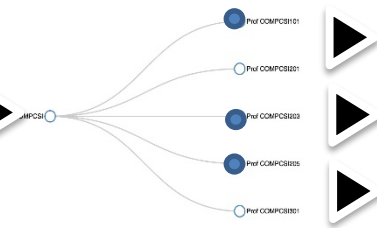
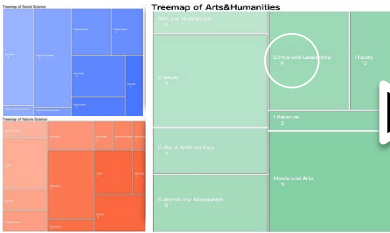
### FACULTY LEVEL

#### Signature Work Mentoring Matching

EXPLORE

NARROW DOWN

COMPARE



#### Topic-level Exploration

##### Rectangle Tree Map with Semantic Zooming

The interactive rectangle tree map gives an overview of the categories of research field active at the university, from Division > Discipline > Sub-research topics > Individual Faculty Members. Clicking on the first level will lead the area clicked on to expand, showing the next level of details. Here we show the disciplines under each division.

#### Faculty-level Exploration

##### Tree map with intersections between nodes

This hierarchical tree map (potentially with intersections) expands the list of faculty members who fall under the selected research topic(s). It helps discover faculty with multiple/interdisciplinary research interests.

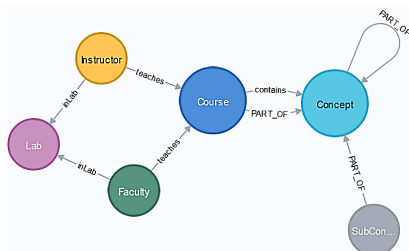
#### Detail Comparison

##### Radar map comparing different dimensions

This gives a detailed comparison between faculty members selected from the tree map in 5 aspects: research publication, industrial application, artistic output, mentee capacity, and inter-disciplinarity.



### INTEGRATED SYSTEM



#### Interdisciplinary Research Network

##### Force-Directed Network for Faculty Research Topic Similarity

Nodes represent individual faculty members; links indicates similarity in terms of research topic; The color of the nodes represent the discipline the faculty belongs to according to his/her/their PhD designation. The similarity between faculty's research is calculated as text similarity via Word2Vec model according to faculty's submitted research description. When hovering one's mouse over to a node, the faculty's name will show, and the first-degree connections will be highlighted.