Digital Technologies for E-learning

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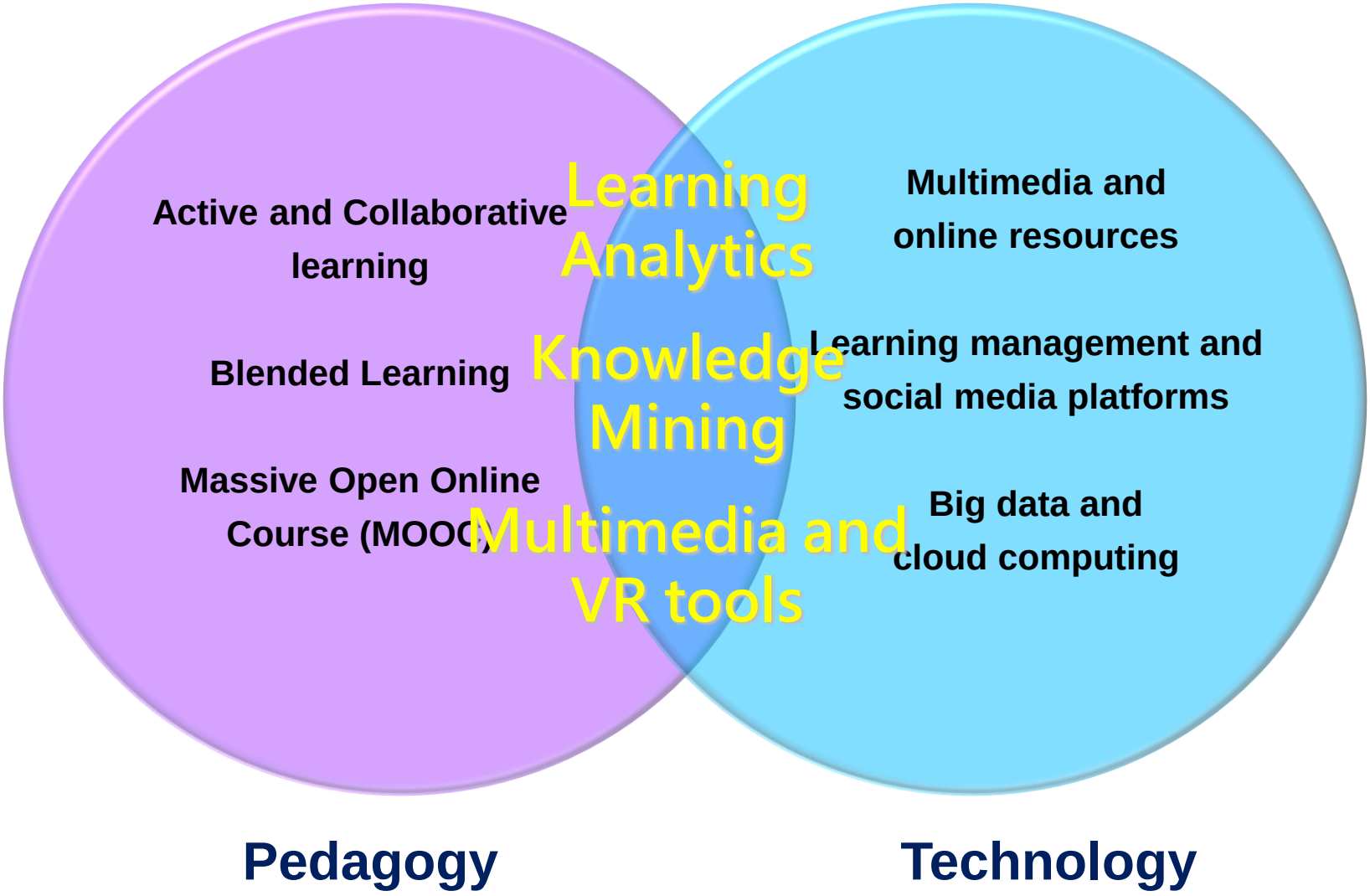
Research Challenges in E-learning



Massive Open Online Courses

A **massive open online course** (**MOOC**) is a type of online course aimed at large-scale participation and open access via the Internet.

- In addition to online video lectures, learners are involved actively in the learning process
- MOOCs go beyond just offering courses and content. Learning analytics allow us to understand how students learn and how teachers can improve their teaching.

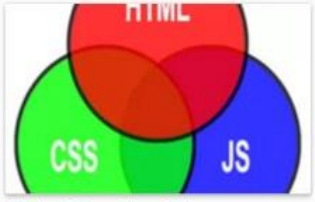
HKUST's MOOC Experience

coursera | Global Partners

Courses Partners About | S Pong

The Hong Kong University of Science and Technology

HKUST - A dynamic, international research university, in relentless pursuit of excellence, leading the advance of science and technology, and educating the new generation of front-runners for Asia and the world.



HTML, CSS and JavaScript
On-Demand

Server-side Development with NodeJS
On-Demand

Multiplatform Mobile App Development with Web Technologies
On-Demand

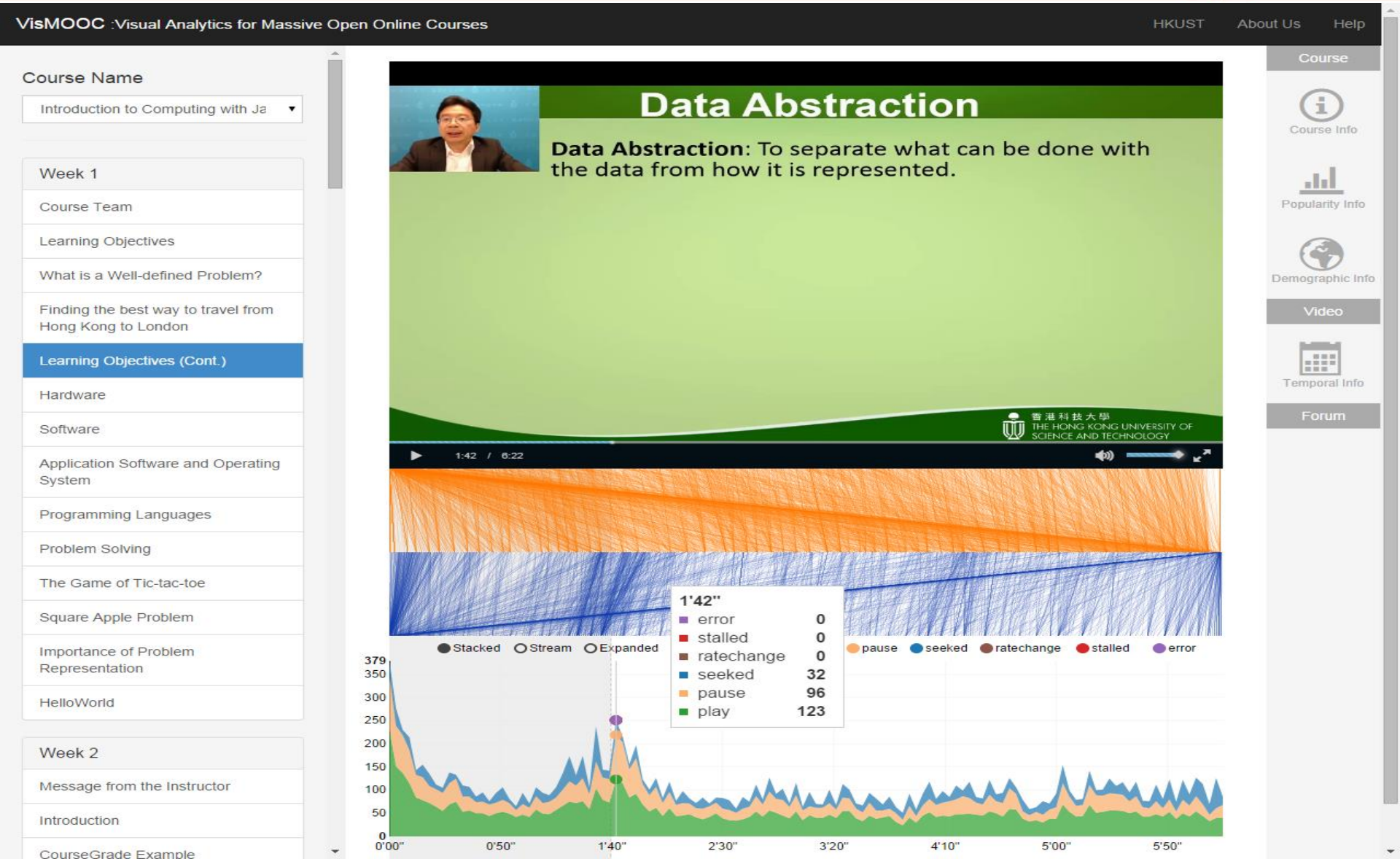
Front-End Web UI Frameworks and Tools
On-Demand

Front-End JavaScript Frameworks: AngularJS
On-Demand

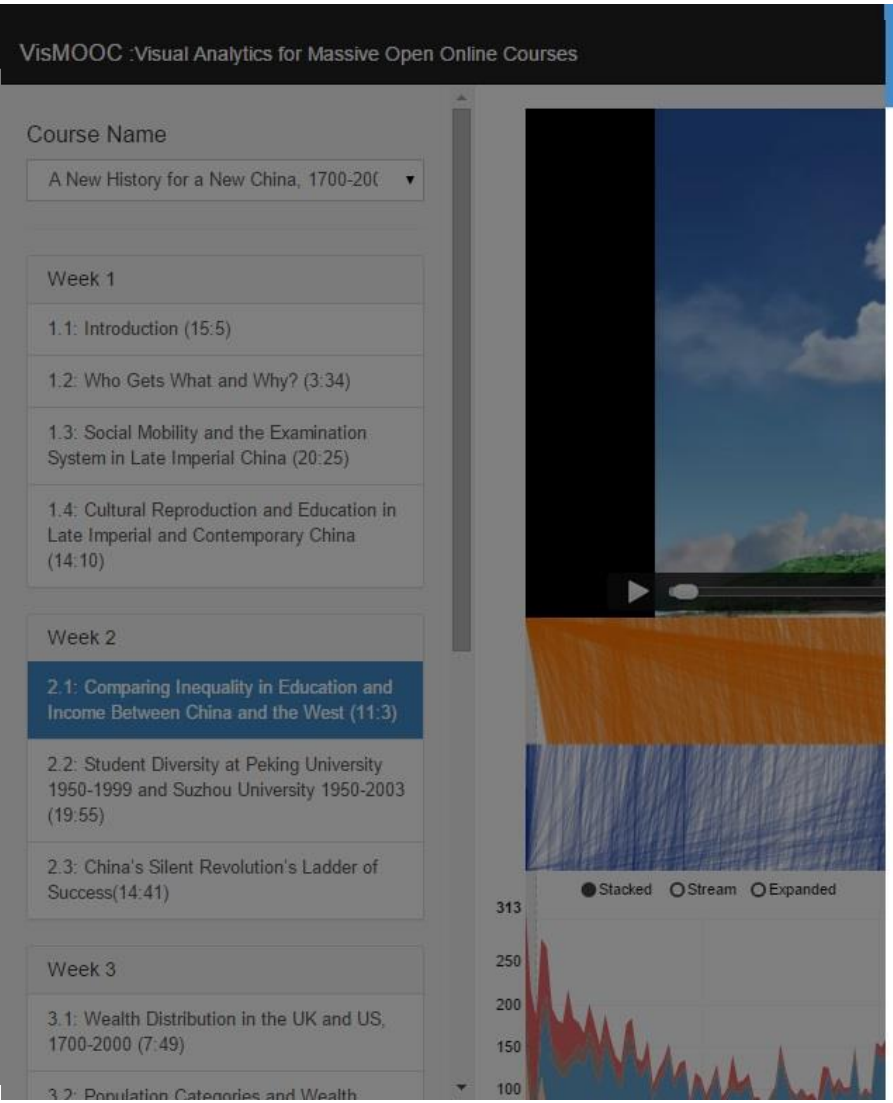
Full Stack Web Development Specialization Capstone Project
On-Demand

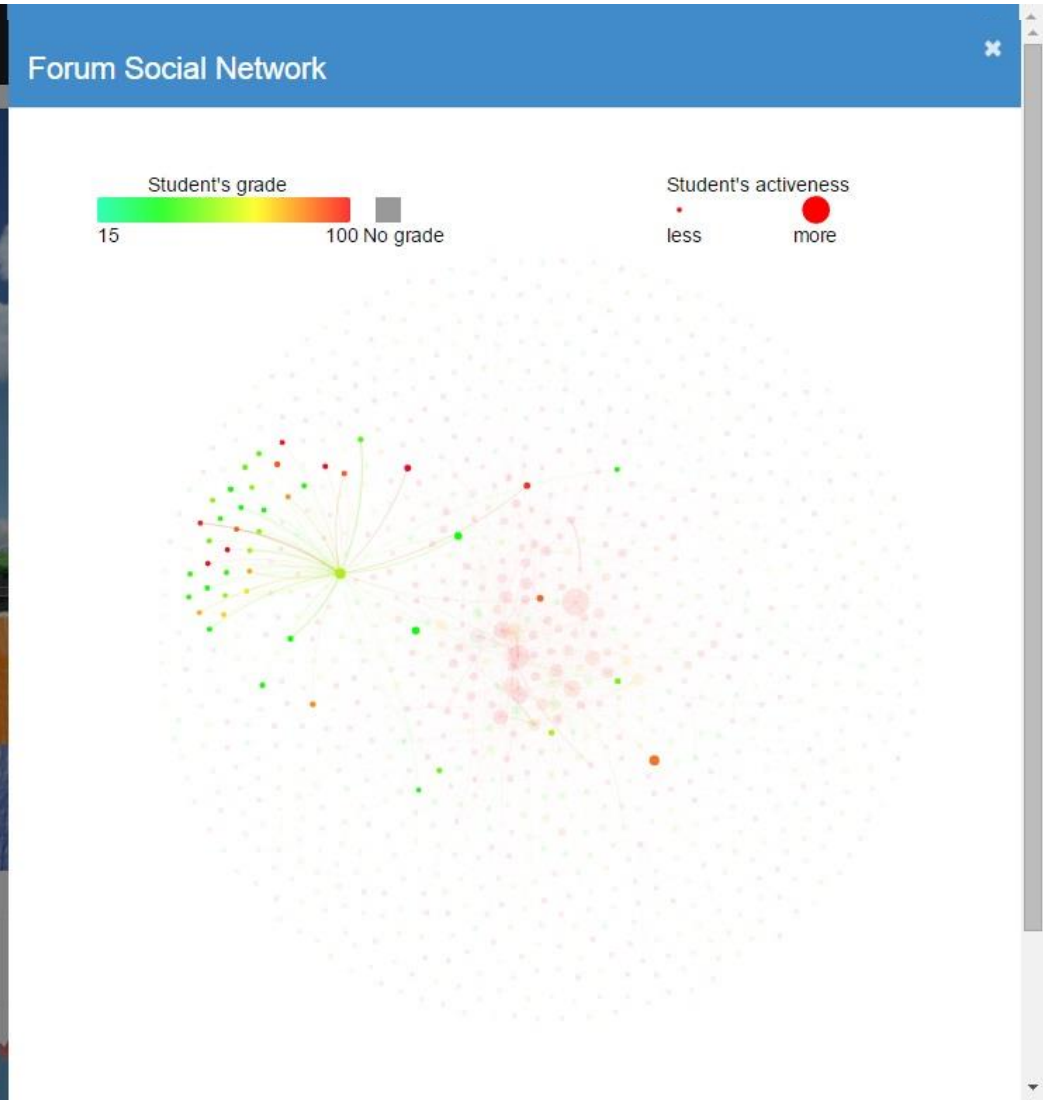
HKUST's MOOC Experience

Learning Analysis on clickstream pattern using stacked graphs



Learning Analysis on clickstream patterns





Knowledge Mining from Lecture Videos

Knowledge mining from a lecture video corpus of an academic subject using Multimodal Analysis

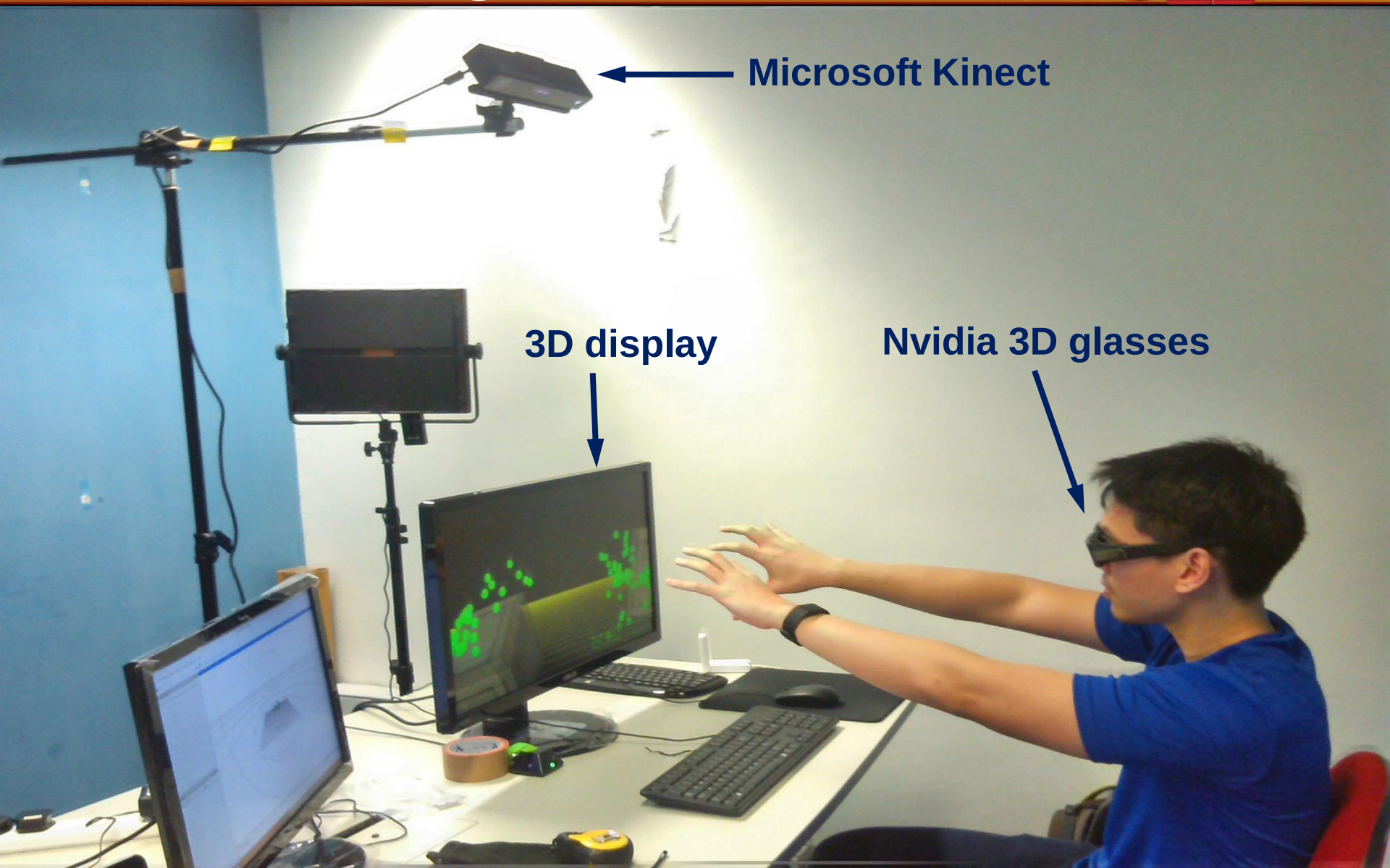
- Facilitate the searching of concepts in a lecture video corpus
- Extract the relationships between concepts so as to identify effective learning strategies for the academic subject

Multimedia and VR tools for E-learning

Develop multimedia and virtual reality tools that could fit the learning style of individual learners

- The VARK model classifies learners based on the following sensory modalities:
  - **V**isual
  - **A**uditory
  - **R**eading or w**R**iting and
  - **K**inesthetic
- Systems can be developed to allow multimedia content and postings to be used according to individual's learning style

Multimedia and VR tools for E-learning




Thank you!