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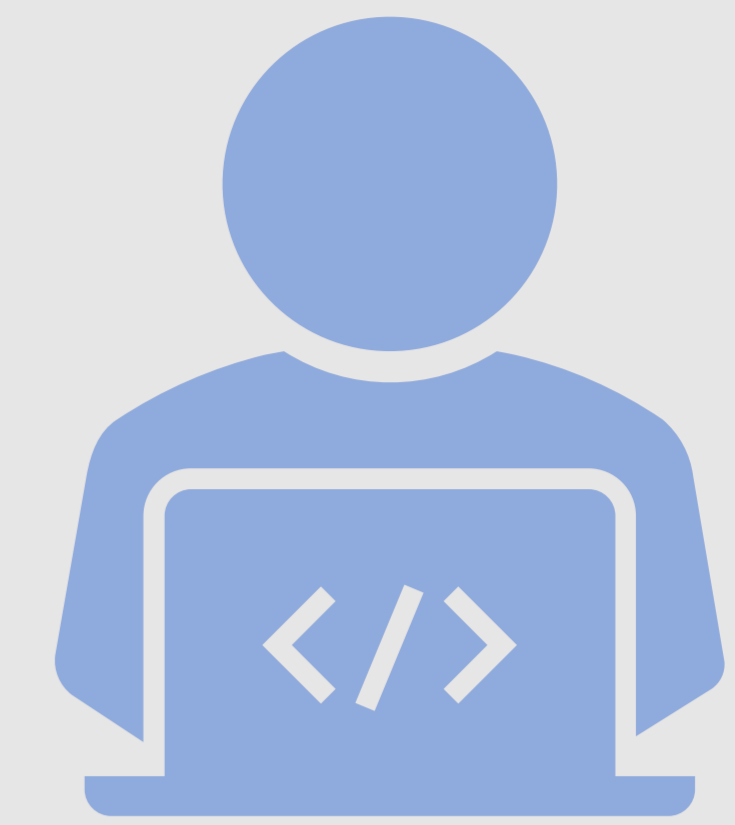
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Adaptive Learning Technology based on Working Memory Capacity

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Theoretical background

- Increasing use of pedagogical videos [1]
 - Transient information = huge solicitation of working memory [2]
 - Inter-individual differences in working memory capacity (WMC) [3] [4]
- Individual differences in video processing and learning depending on WMC



Aims of the project

Develop and test solutions to **reduce** working memory load during video learning

Proposed solutions:

- Imposed pauses
- Highlights (e.g., arrows, keywords)



Sought results:

Solutions more beneficial to low-WMC learners than high-WMC learners

Design a video environment that can **automatically**:

Detect each learner's WMC

Adapt to each learner's WMC

Challenge: How to estimate WMC?

- Standard approach: Complex-span task → Cognitively costly
- Proposed approach: Estimation in real-time during the first moments of video watching → Need to define indicators of WMC based on strategies and performance

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