

# Current Research Projects

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Systems

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MSc CIS Graduate Students Orientation

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# Project I: UAVs Processing and MAS for Situation Awareness and Uncertainty Assessment

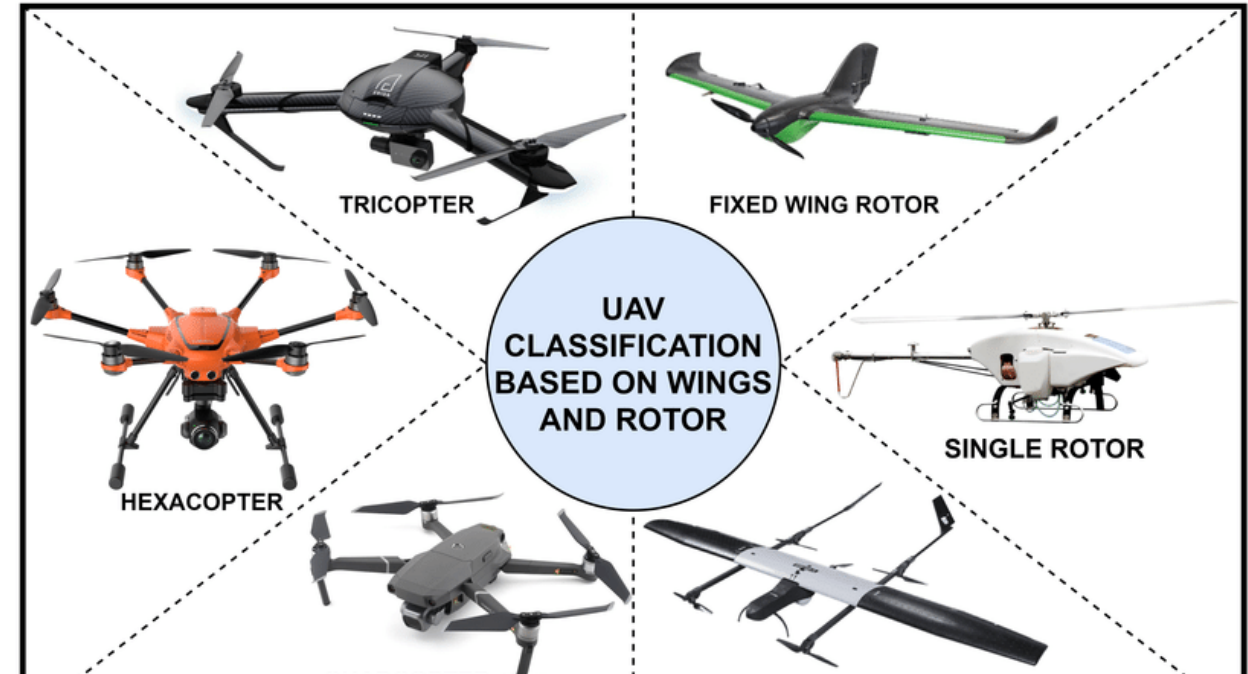
- Major Innovation Fund, Space and Defense Technologies Alberta



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# Goal 1

- Algorithms to coordinate a fleet of UAVs distributed optimization problems.
- Multiagent deep reinforcement learning (MADRL)



# Goal 2

An interactive, immersive multi-UAV operation training environment, a distributed cyberlearning environment. This environment will combine or integrate the computer-based virtual mode and the physical mode, enabling from personalized and collaborative team-based training.



# Goal 3

Algorithms to assess uncertainty, to analyze data (i.e., hyperspectral imagery) using remote sensing to address problems in real-world



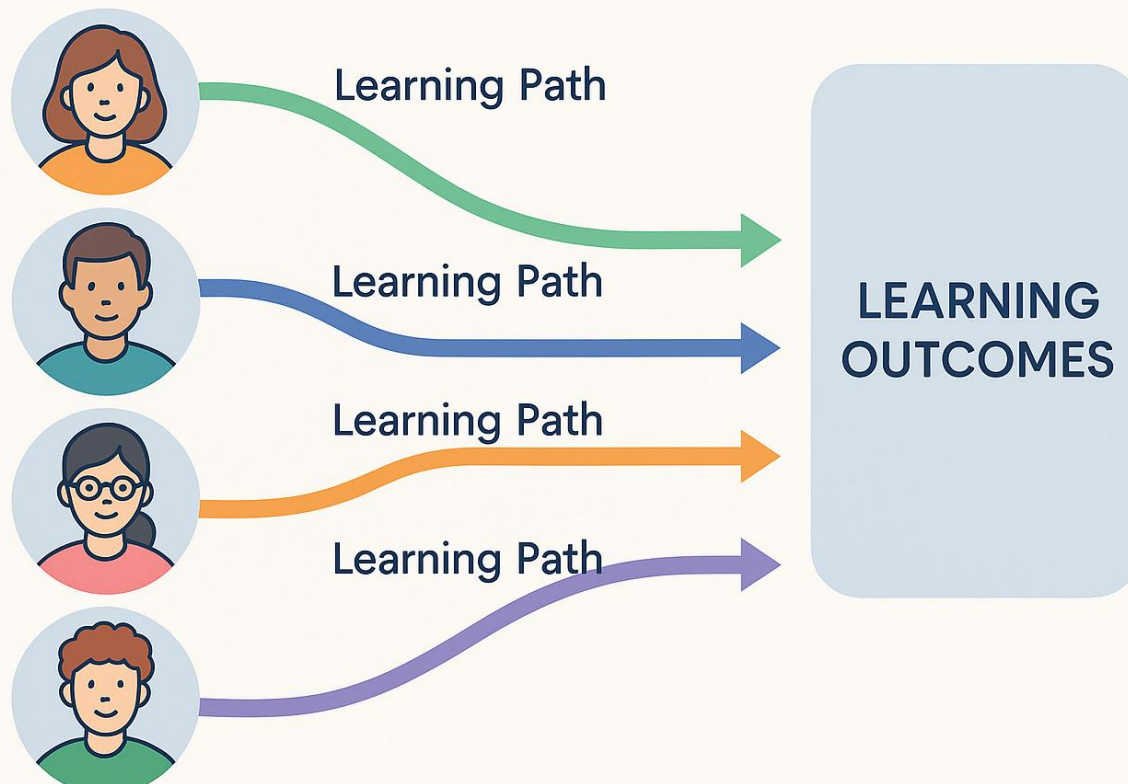
## Team

- MSc CIS Students
  - Gagan Jhaji
  - Wilson Hau
  - Greg MacDonald
  - Edenilson De Meira
- Collaborators
  - University of Calgary
  - UAV companies
  - Burgund Diamond Mines Inc.

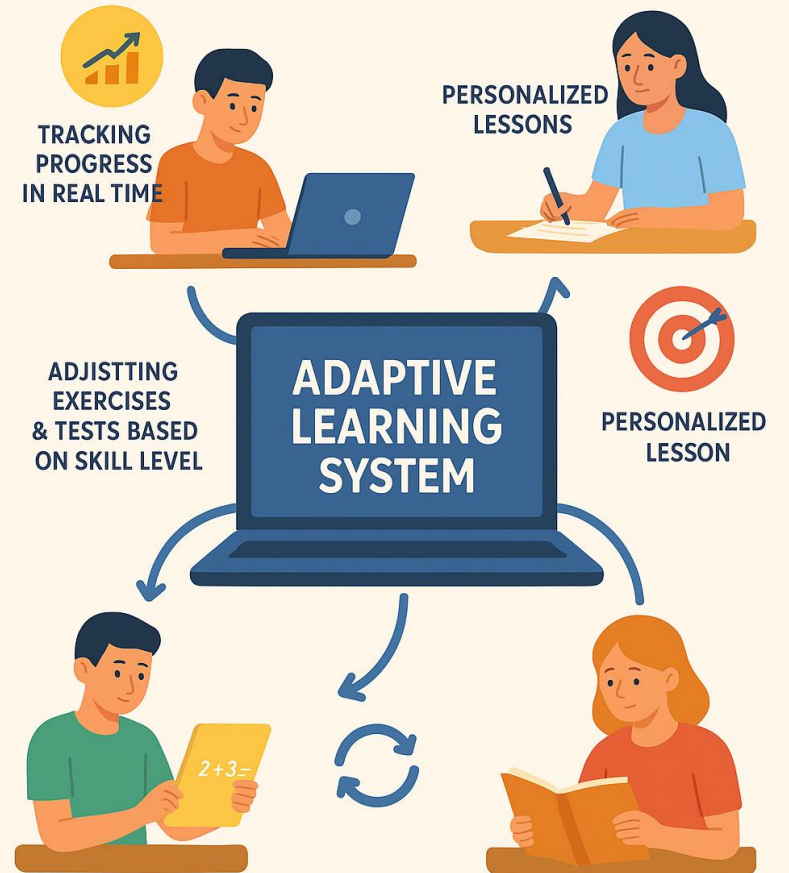
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# Project II: AI Powered Adaptive Online Learning Systems

## PERSONALIZED LEARNING



## ADAPTIVE LEARNING IN EDUCATION



# Project II: AI Powered Adaptive Online Learning Systems



Title: Eliciting Adaptive Sequences for Online Learning



Funding Agency: NSERC, Alberta Innovates, AU

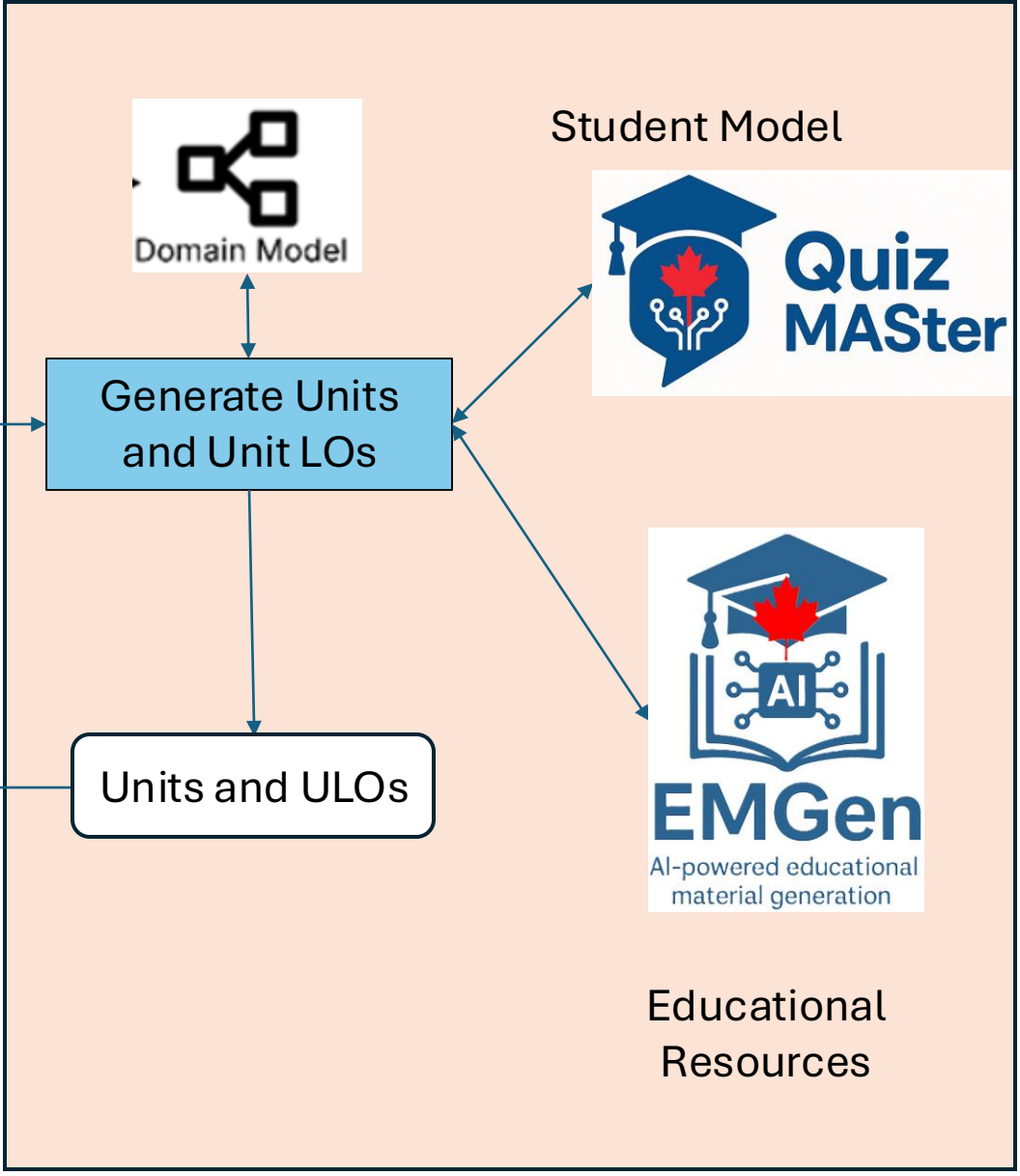
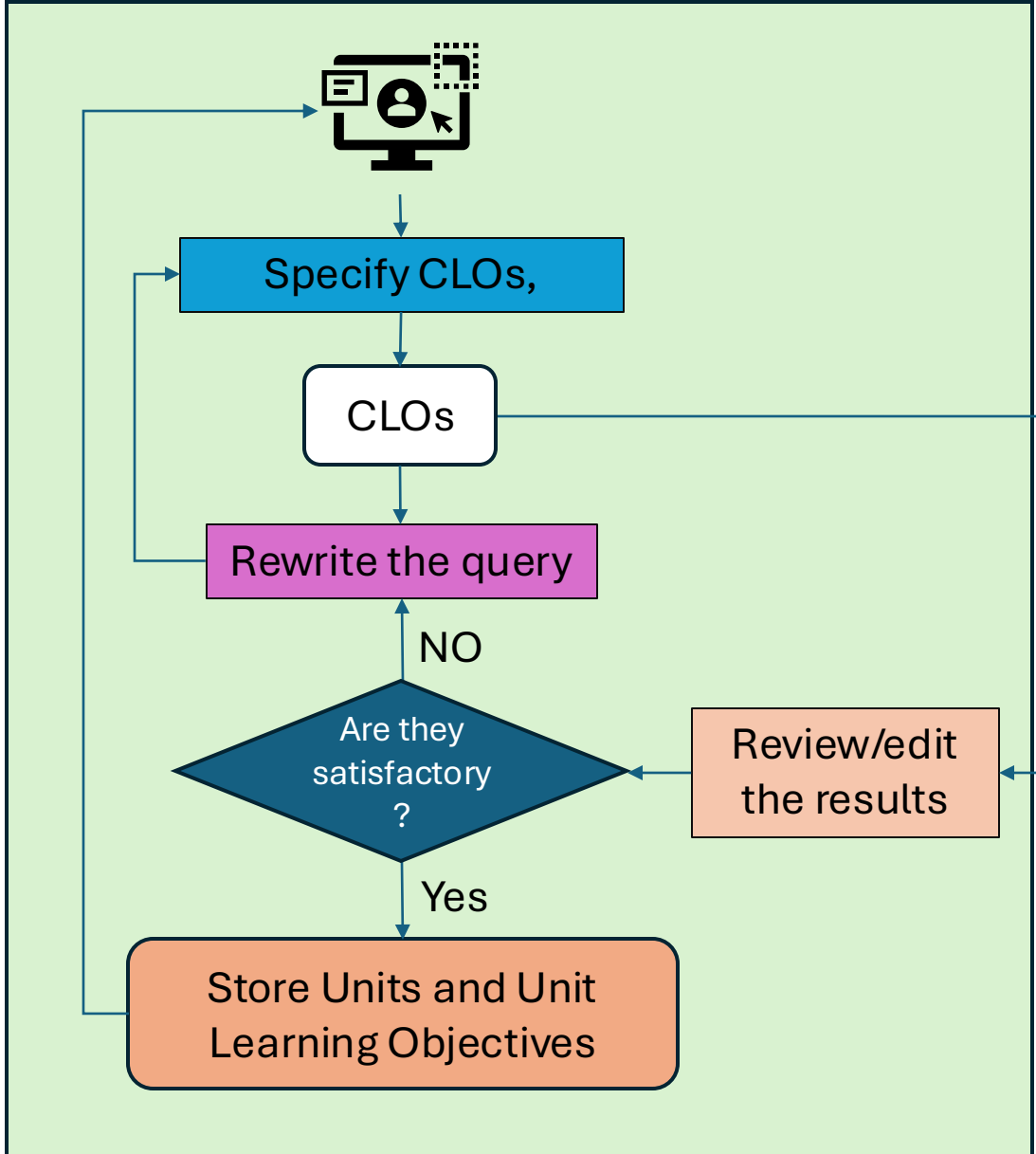


Goal: to enable online learning systems to provide adaptively altering learning sequences of content and activities in real time that will best fit the student's needs and knowledge states.



Methods: Reinforcement Learning, Knowledge Graphs, Simulation, Empirical study, GenAI,

# Instructor-AI Collaboration for Adaptive Teaching and Learning



# Team

- MSc/BSc CIS Students
  - Raymond Morland
  - Ryan Gustafson
  - Nicholas Reh
  - Adam Zieleman
  - Kishan Kom

# Thanks

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