

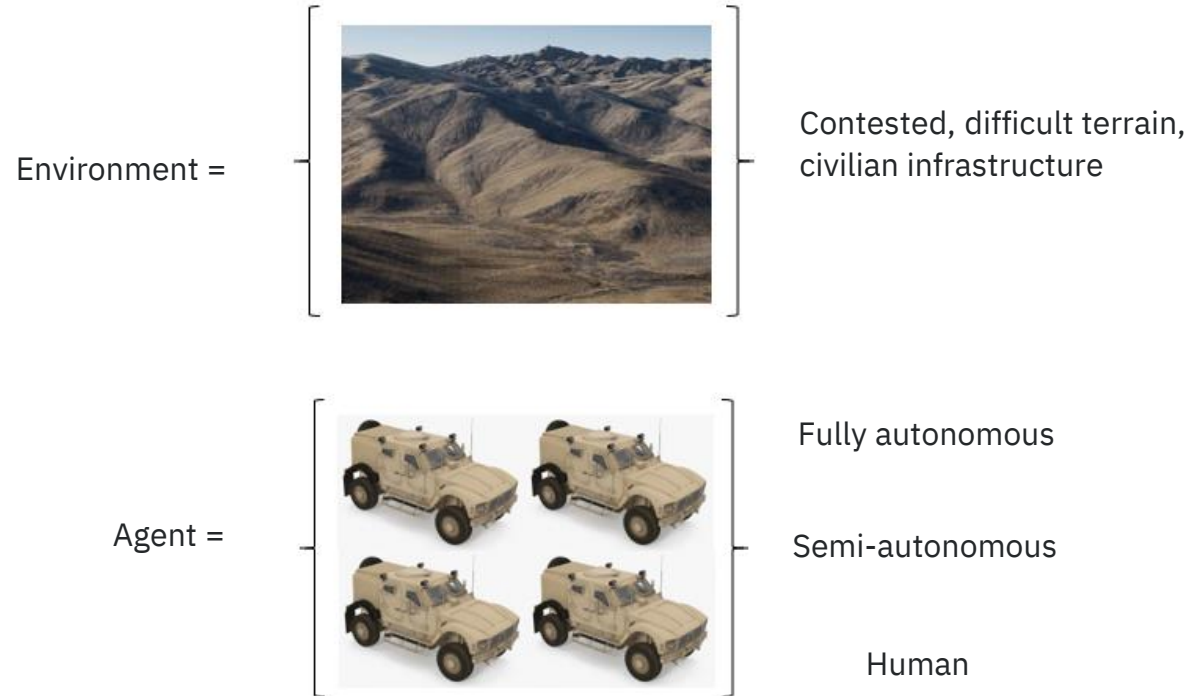


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Session 6 – Conclusion + Guest Lecture w/ Professor Sarah Sewall

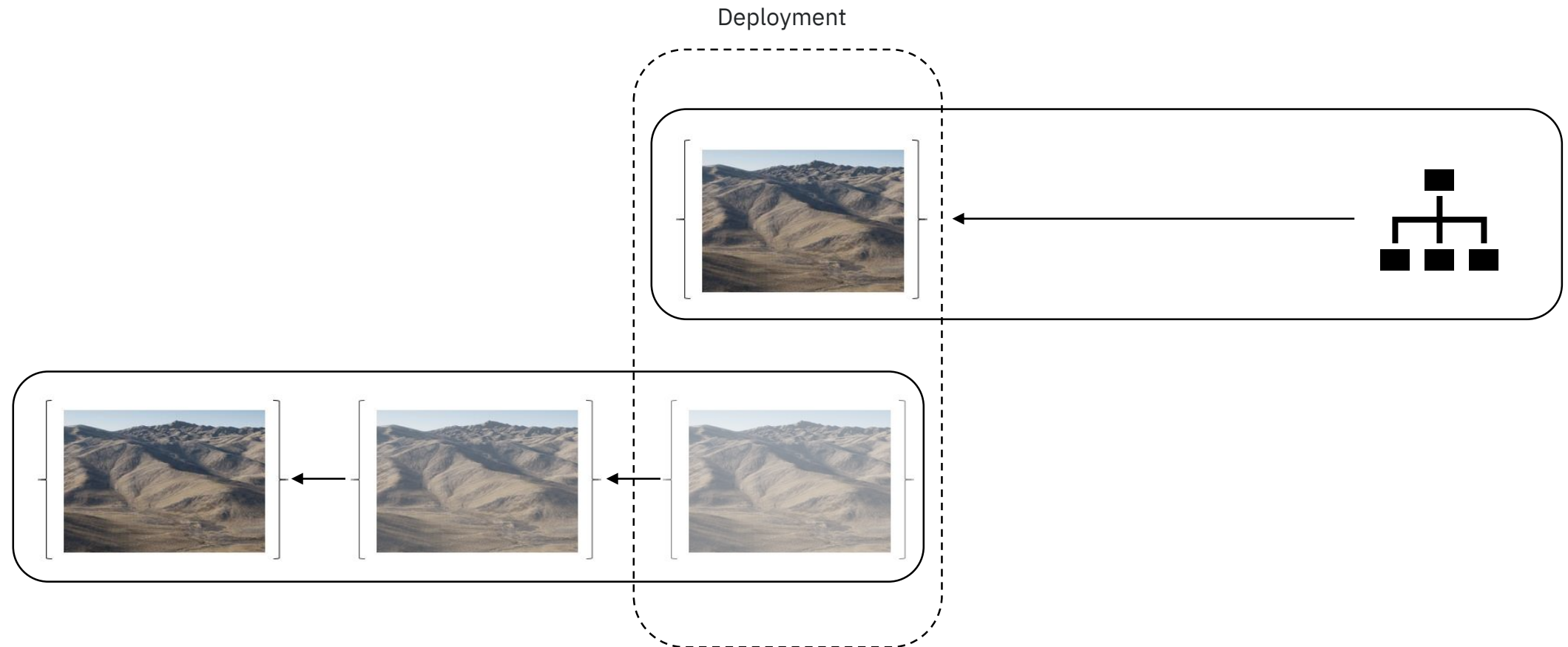
Leo Klenner, Henry Fung, Cory Combs

# Design Challenges of Autonomous Systems



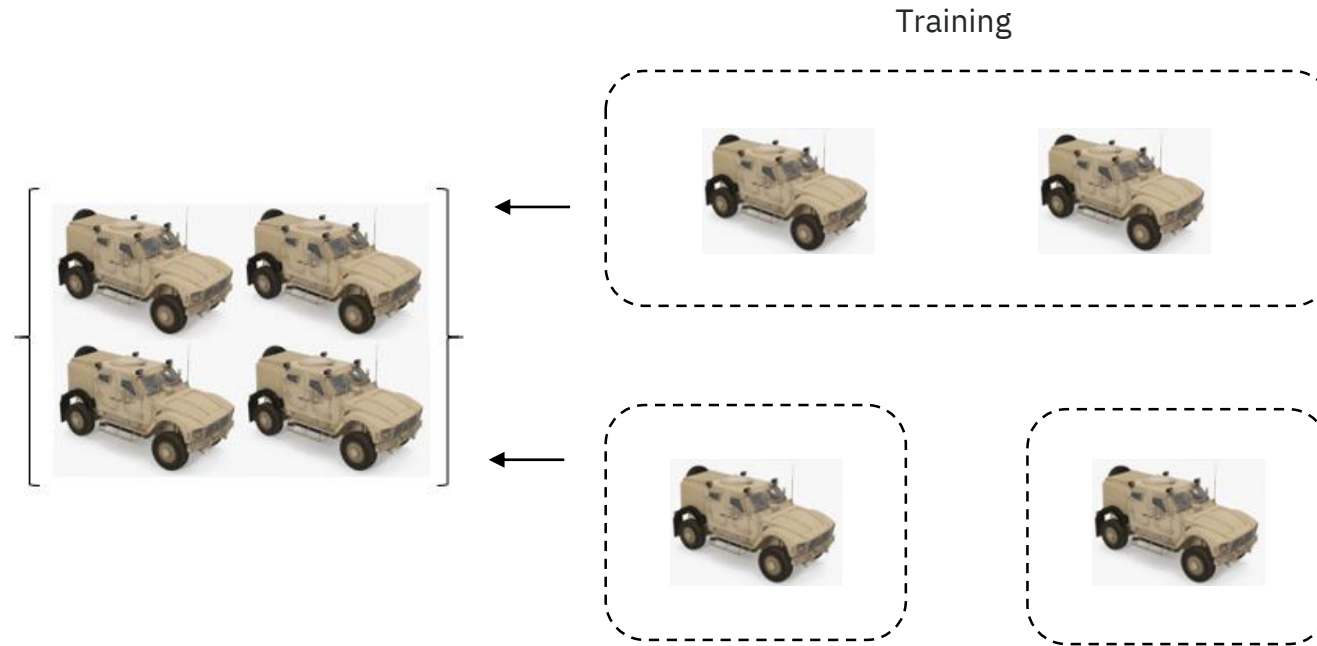
# Model-Based v. Model-Free Learning

> If we elect to have a fully autonomous convoy, should our algorithm be model-based or model-free? What are the risks and opportunities involved in each?



# Multi-Agent Learning

> If we elect to have a semi-autonomous convoy, mixing in human-driven vehicles, how would we handle the different learning processes and ensure integration? What are the risks and opportunities posed by each of the proposed solutions?



# Making Policy Recommendations

> Given the above, what option would you recommend to the deputy commanding officer?



# Assessing Agent-Environment Interaction

- > Say we elect to pursue a semi-autonomous convoy (to increase the breadth of ability, adaptability, etc.). The environment, being contested and variably controlled by different groups, may change quickly.
  - > What are the chief forms of failure we need to prepare for (i.e. failure modes)?
  - > The commander has heard that autonomous systems of this sort can take unpredictable actions, something to do with mapping their landscape. Is this a risk in our situation? In layman's terms, why or why not?





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## Guest Lecture with **Professor Sarah Sewall**





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**Thank you for being part of CAPS!**  
Let's keep in touch...

