



## LECTURE 7

# GEOSPATIAL AI AGENTS AND DYNAMIC PROMPTING

Geospatial Representation Learning

PRESS – OR SPACE.



© Marc Rußvurm

Licensed under [Creative Commons Attribution–NonCommercial 4.0 International \(CC BY-NC 4.0\)](https://creativecommons.org/licenses/by-nc/4.0/).  
You may share and adapt these slides for teaching, research, and other non-commercial educational purposes with attribution.  
Commercial training, paid workshops, consulting seminars, or incorporation into commercial course products require prior permission.

# Learning Outcomes

## Lecture

- Explain the basic components of geospatial AI agents, including prompts, tools, memory, planning, execution, and evaluation.
- Describe dynamic prompting as a strategy for adapting agent behavior to geospatial tasks, data sources, and user goals.
- Compare manual geospatial analysis workflows with agent-assisted workflows.
- Identify geospatial use cases for AI agents, including data discovery, data preprocessing, exploratory analysis, mapping, retrieval, literature analysis, and decision support.
- Explain how tools such as OpenClaw and Codex can support geospatial workflow automation and software development.
- Evaluate agent outputs with respect to correctness, reproducibility, transparency, uncertainty, robustness, and cost.

## Lab

- Design a simple agent-assisted workflow for a geospatial analysis question.
- Connect an AI agent or scripted assistant to selected geospatial data tools or APIs.
- Evaluate the agent's outputs against a manually implemented baseline.
- Present limitations, failure cases, and possible improvements of the prototype workflow.



## PRACTICAL 7

# PROTOTYPE GEOSPATIAL AI AGENT

Geospatial Representation Learning

PRESS – OR SPACE.



© Marc Rußvurm

Licensed under [Creative Commons Attribution–NonCommercial 4.0 International \(CC BY-NC 4.0\)](https://creativecommons.org/licenses/by-nc/4.0/).  
You may share and adapt these slides for teaching, research, and other non-commercial educational purposes with attribution.  
Commercial training, paid workshops, consulting seminars, or incorporation into commercial course products require prior permission.