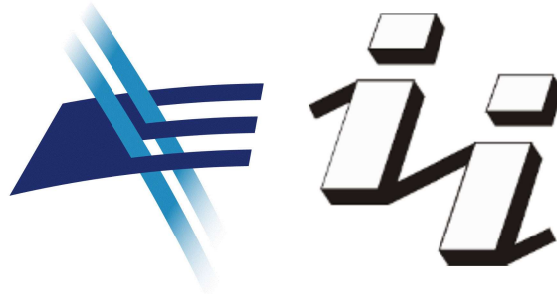# Artificial Intelligence and New Silk Road

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Motivation and Goal

- AI in the context of trade and economy

- New Silk Road

- AI applications in:
  - Freight
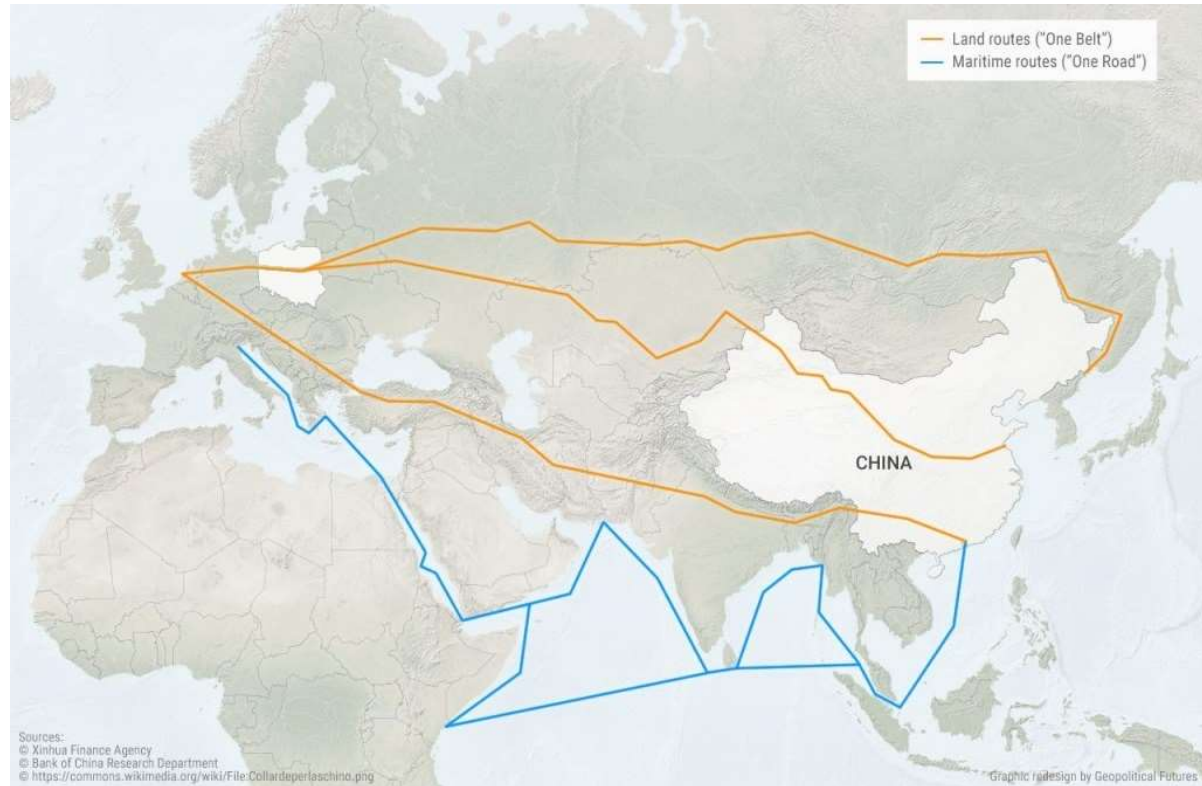 - Scheduling
  - Security

China-Europe trade

- TEU – twenty-foot container equivalent

- 2017: China → Europe
  - 10 mln. TEU – by sea – 35 days
  - 0.2 mln. TEU – by train – 18 days, 4 days in motion
  - Hardly any – by car
- Sea freight becomes a bottleneck in Eurasian trade
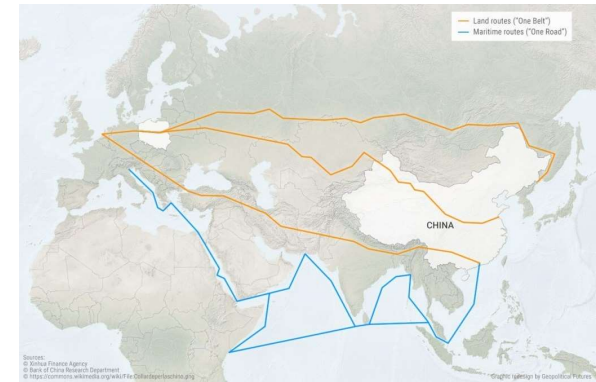
New Silk Road

- Highways

- Railway

- 65 countries

- Estimated costs: 4-8 trillion USD
  GDP in 2018 [trillion USD]:
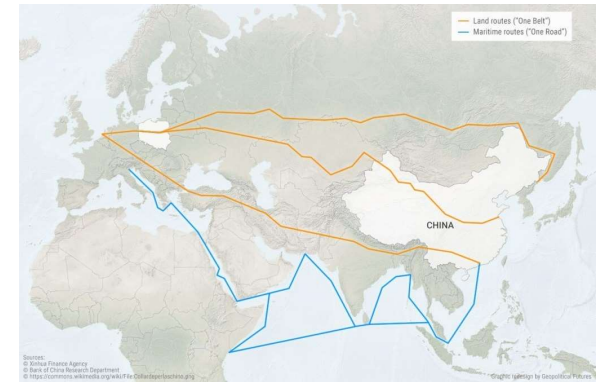 China 13.6, UE 18.7, Poland 0.5

New Silk Road

- Freight on the new silk road
  - On trucks
  - On trains

- Basic functionalities
  - Freight
  - Loading
  - Transhipment: train ↔ truck ↔ ship
  - Unloading

- Also: coordination, control, monitoring, assuring security
- With AI, all of those: unmanned
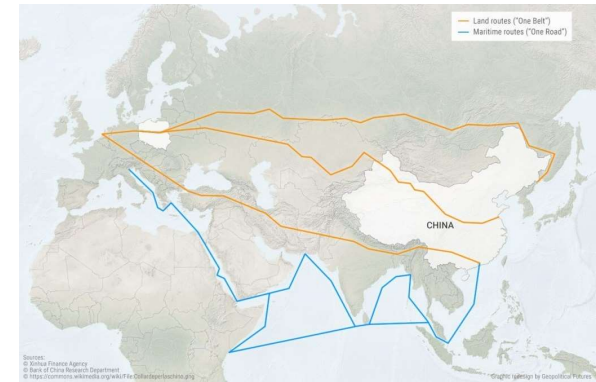
Freight on trucks

- Road trains like in Australia

- Unmanned driving

  - Understanding of scene

  - Decision making

  - Actually easier than in city traffic

- Coordination

- Anomaly detection
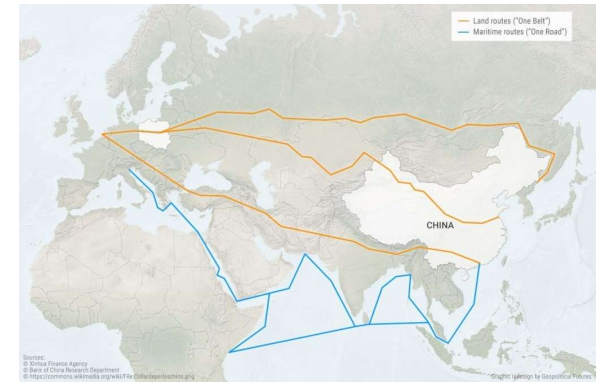
  - Broken trucks

  - Accidents

(Un)Lading/Transhipment

- Whatever happens in logistic centers but on larger scale

- For a set of object
  - Recognize them
  - Grab them
  - Put them in an appropriate place (container)
  - Avoid collisions

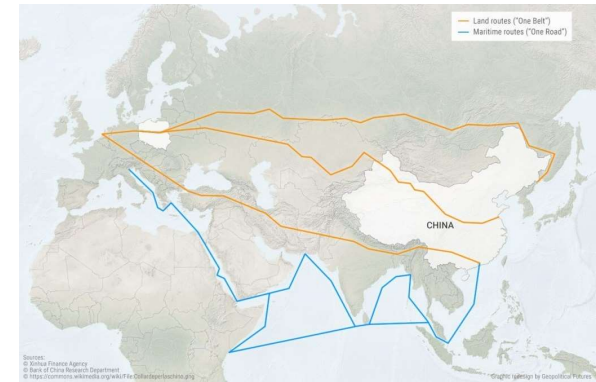- AI in mobile robotics in unstructured environment

(Un)Lading/Transhipment

- Proper trucks in proper places

- Proper packages in proper trucks

- Coordination / control
  - Scheduling
  - Optimization
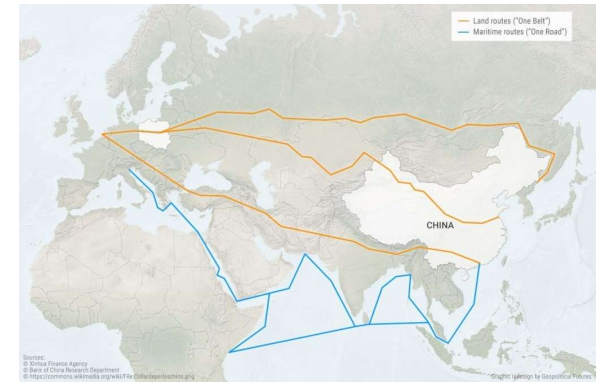 - Decision making
  - Prediction

Auxiliary functionalities

- Assuring security
  - Preventing burglaries, replacing cargo
  - Visual monitoring
- Anomaly detection and reaction to these

Summary

- Extremely large scale of whatever happens on the new silk road

    → Funding

- Plenty of room for deploying AI

- Plenty of places where research needs to reach beyond state-of-the-art

Thank you!