Crafting quality law and policy for robotics

Collab. Res.: NRI: FND: Grounded Reasoning about Robot Capabilities for Law and Policy
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Who we are:

Dr. **Cindy Grimm** (PI, Oregon State Univ.)
Dr. William Smart (Co-PI)
Sogol Balali (PhD Candidate)
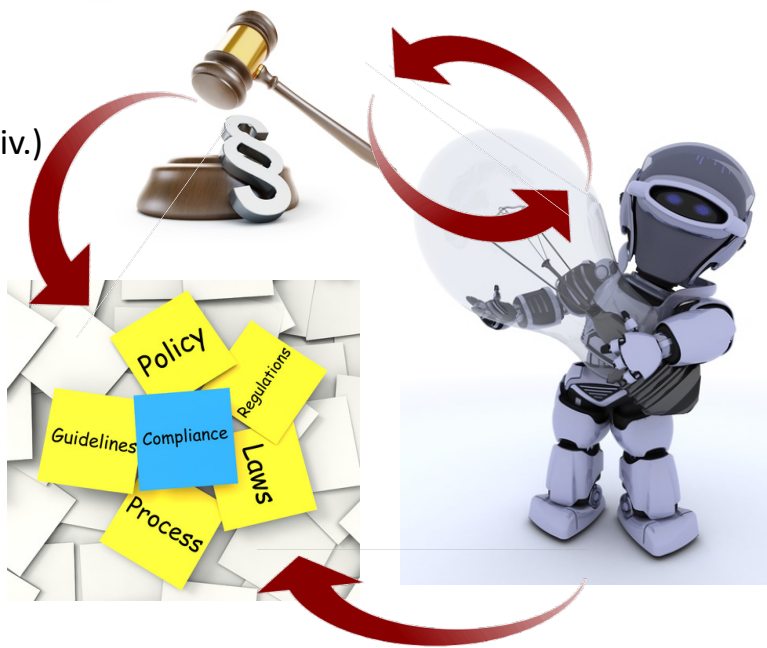Kenneth Lang, Kelton Bruslind,
Sergiy Greblov, Myla Garlitz

Ruth West (PI, Univ. of N. Texas)
Hannah Helgesen

Dr. Ross Sowell (PI, Rhodes College)
Marisa Hudspeth, Osman Celikok,
Waldo Abu Al-Afia

Scientific Impact

- Framework for establishing effective communication between law and policy and technology experts

Broader Impact

- Law and policy around robotics that align with technological capabilities

- Designing robotics research agendas in the context of the public and society

Challenge: The knowledge gap

Reason properly about

- Robot capabilities
- Types of failures

  … NOT teach them about how the technology works

Structured conversations

- Policies match robot capabilities
- Consequences of technology accounted for early (self-regulation)

Basic understanding

- How historical context and existing law influence new laws and policies
- How technology choice can influence subsequent law and policy

Approach: Experiential boot-strapping

Experiences with existing technologies (eg snapchat, maps, face tagging tools)

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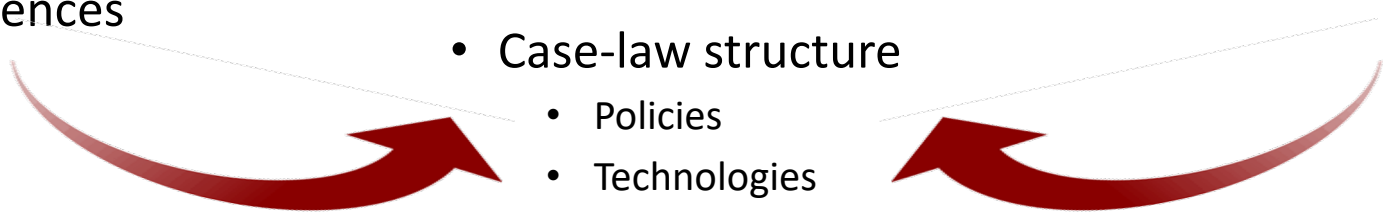Interactive experiences

- Capabilities

- Limitations

Case-law approach

- Mix-and-match policies, technologies

- Case-law structure
  - Policies
  - Technologies

Narrative-based examples

- Historical context of court examples

- Essence of Tort law

Research questions and hypothesis

- Hypothesis 1: Interactive, hands-on activities paired with real-world experiences are effective at enabling non-technical people to reason properly about robot capabilities.
  - Hypothesis 1a: Reasoning correctly about robot capabilities and potential failures does not require a deep technological understanding of the underlying mechanisms
  - Hypothesis 1b: People's experiences with everyday technology can be leveraged to "ground" reasoning about robot capabilities

- Hypothesis 2: Narrative examples in law are sufficient for extending reasoning to new situations.
  - Hypothesis 2a: Narrative exemplars are more effective than fact-based exemplars

- Hypothesis 3: Language choice (eg, detects versus sees) can reduce the tendency to anthropomorphize robots

- Evaluation:
  - Quantitative measurement of effectiveness of scaffolding material
    - Ability to correctly assess robotic capabilities/failures in novel cases
    - Ability to effectively extend narrative examples to new scenarios
  - Qualitative assessment of case studies by law and technology experts