

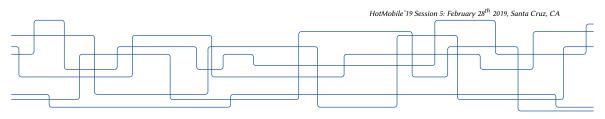
# **EdgeDroid**

An Experimental Approach to Benchmarking Human-in-the-Loop Applications

M. Olguín Muñoz $^{\dagger},$  J. Wang $^{\ddagger},$  M. Satyanarayanan $^{\ddagger}$  and J.  $Gross^{\dagger}$ 

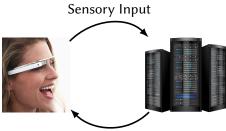
† KTH Royal Institute of Technology

<sup>‡</sup> Carnegie Mellon University

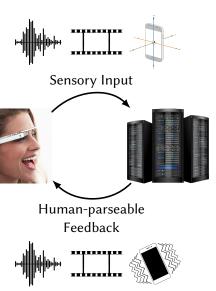


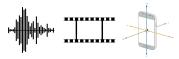
- Introduction & Background
- Experimentally Benchmarking Human-in-the-Loop
- Conclusions

- Introduction & Background
  - Human-in-the-Loop Applications
  - The Problem
- Experimentally Benchmarking Human-in-the-Loop
- Conclusions



Human-parseable Feedback

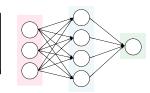




### Sensory Input





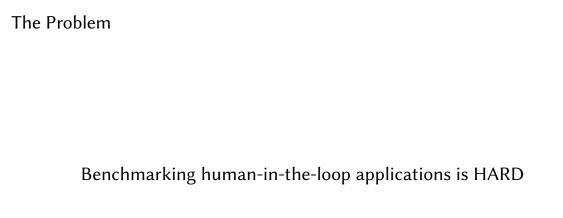


Human-parseable Feedback



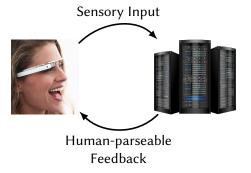




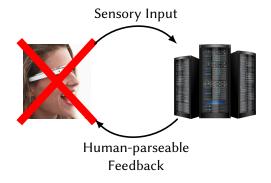


- Introduction & Background
- Experimentally Benchmarking Human-in-the-Loop
  - Approach
  - Implementation
  - Evaluation
- Conclusions

# Approach: Motivation

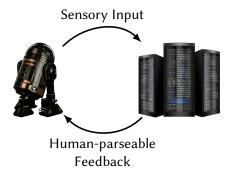


# Approach: Motivation



What if we could do away with the human user?

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What if we could do away with the human user?

EdgeDroid: Idea

► Generate realistic, real-time inputs.

► Correctly react to feedback.

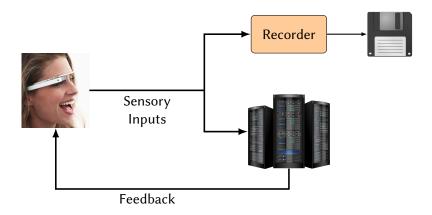


### EdgeDroid: Idea

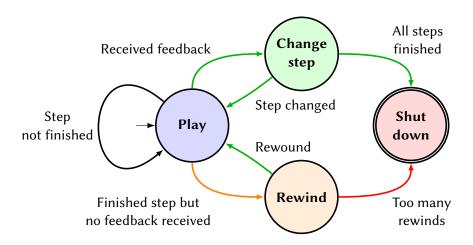
- ► Generate realistic, real-time inputs.
  - ► Trace of human-generated inputs.
- Correctly react to feedback.
  - Model of human interaction.



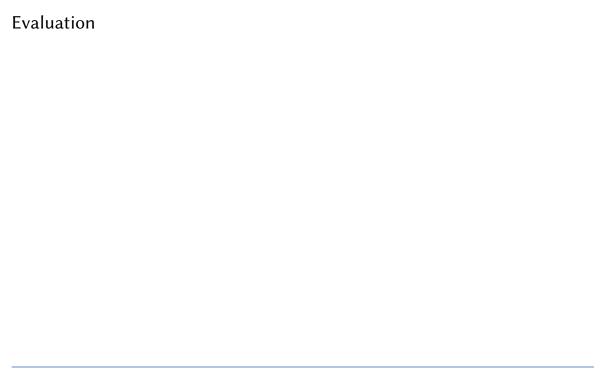
# EdgeDroid: Tracing



### EdgeDroid: User Model







- Introduction & Background
- Experimentally Benchmarking Human-in-the-Loop
- Conclusions



# Thank you!

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