



EdgeDroid

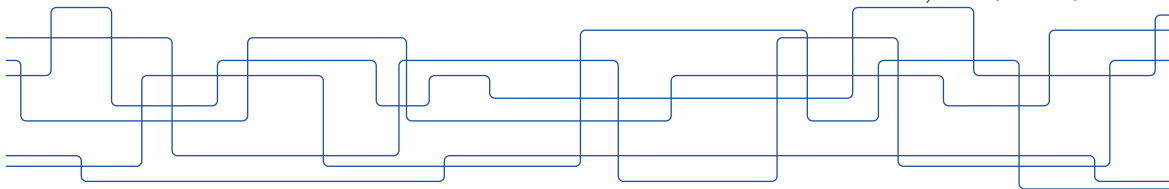
An Experimental Approach to Benchmarking Human-in-the-Loop Applications

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HotMobile'19 Session 5: February 28th 2019, Santa Cruz, CA



Outline

- Introduction & Background
 - EdgeDroid: Experimentally Benchmarking Human-in-the-Loop
 - Conclusions
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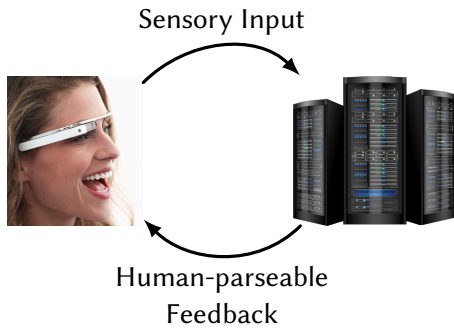
Outline

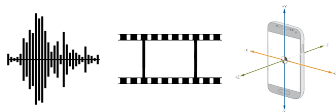
- Introduction & Background

- Previous & Related Work
- Motivation
- Main Contributions

- EdgeDroid: Experimentally Benchmarking Human-in-the-Loop

- Conclusions

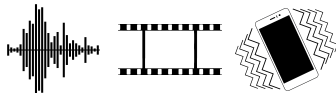


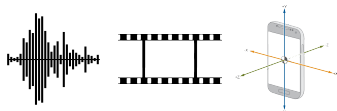


Sensory Input



Human-parseable
Feedback

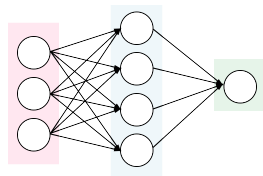
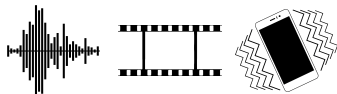




Sensory Input



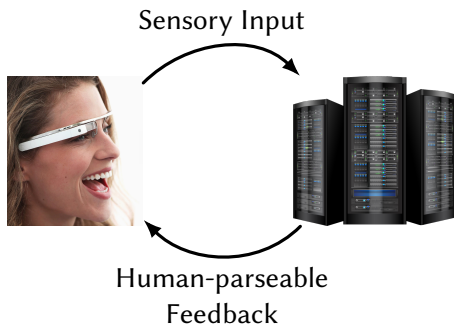
Human-parseable
Feedback



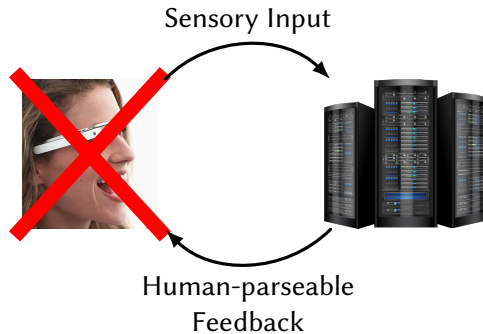
Motivation

Benchmarking human-in-the-loop applications is HARD

Motivation

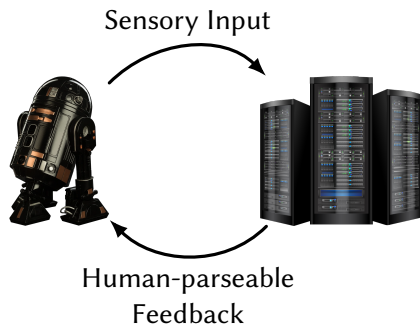


Motivation



What if we could do away with the human user?

Motivation



What if we could do away with the human user?

Outline

- Introduction & Background
 - **EdgeDroid: Experimentally Benchmarking Human-in-the-Loop**
 - Approach
 - Implementation
 - Evaluation
 - Conclusions
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EdgeDroid: Idea

- ▶ Generate realistic, real-time inputs.
- ▶ Correctly react to feedback.

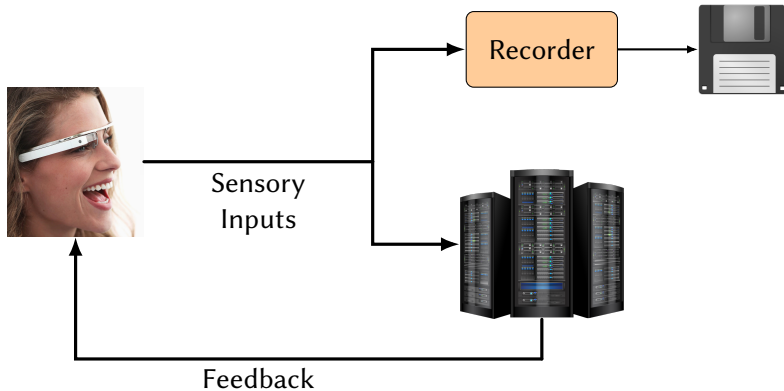


EdgeDroid: Idea

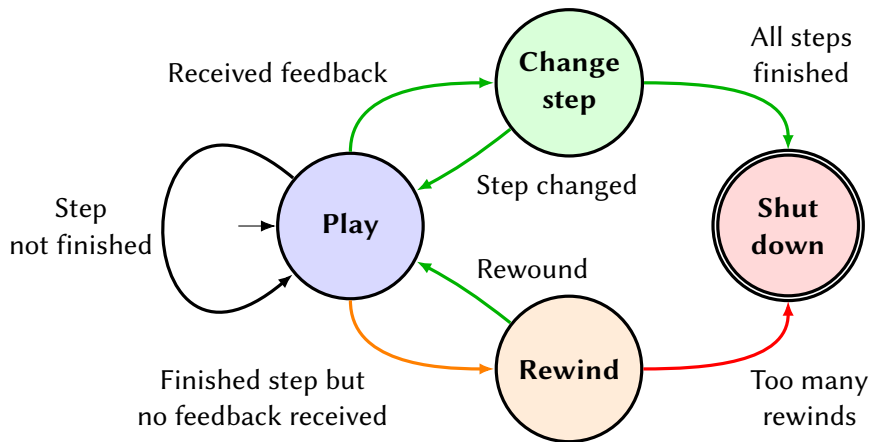
- ▶ Generate realistic, real-time inputs.
 - ▶ Trace of human-generated inputs.
- ▶ Correctly react to feedback.
 - ▶ Model of human interaction.



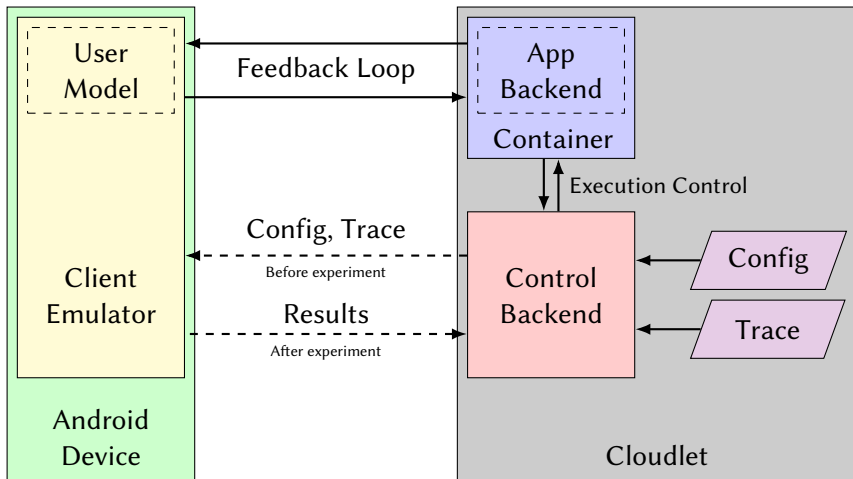
EdgeDroid: Tracing



EdgeDroid: User Model



Implementation



Evaluation

Outline

- Introduction & Background
 - EdgeDroid: Experimentally Benchmarking Human-in-the-Loop
 - Conclusions
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Thank you!

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