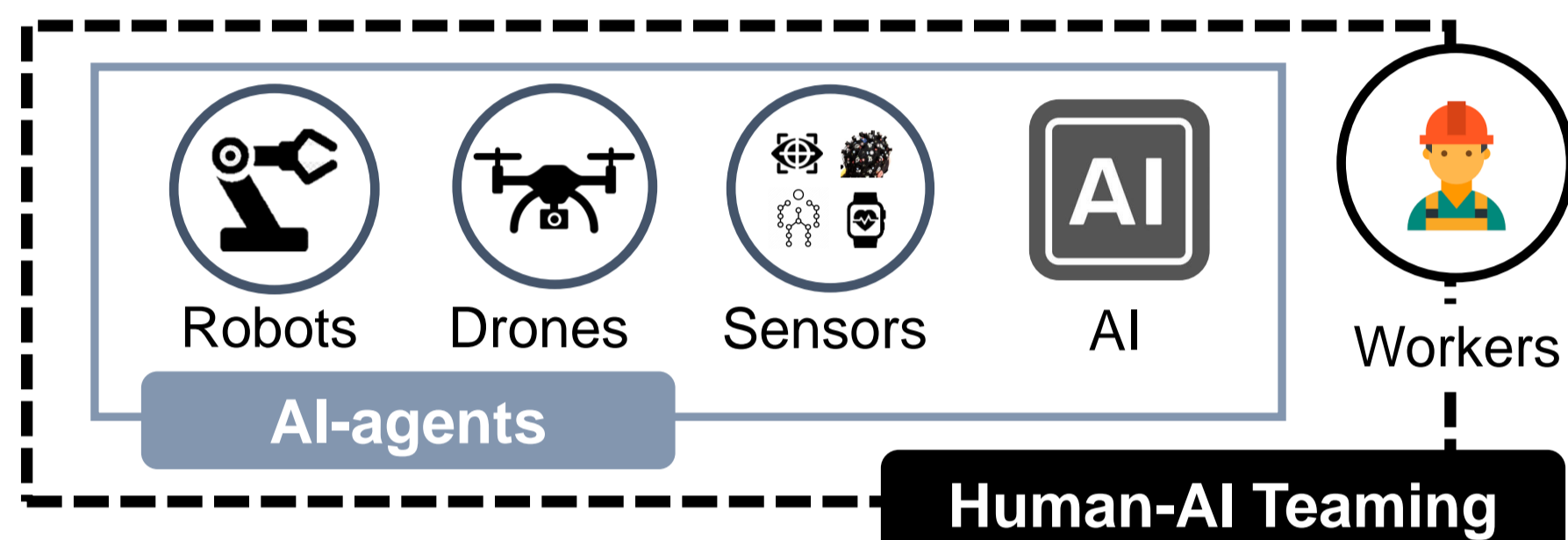


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INTRODUCTION

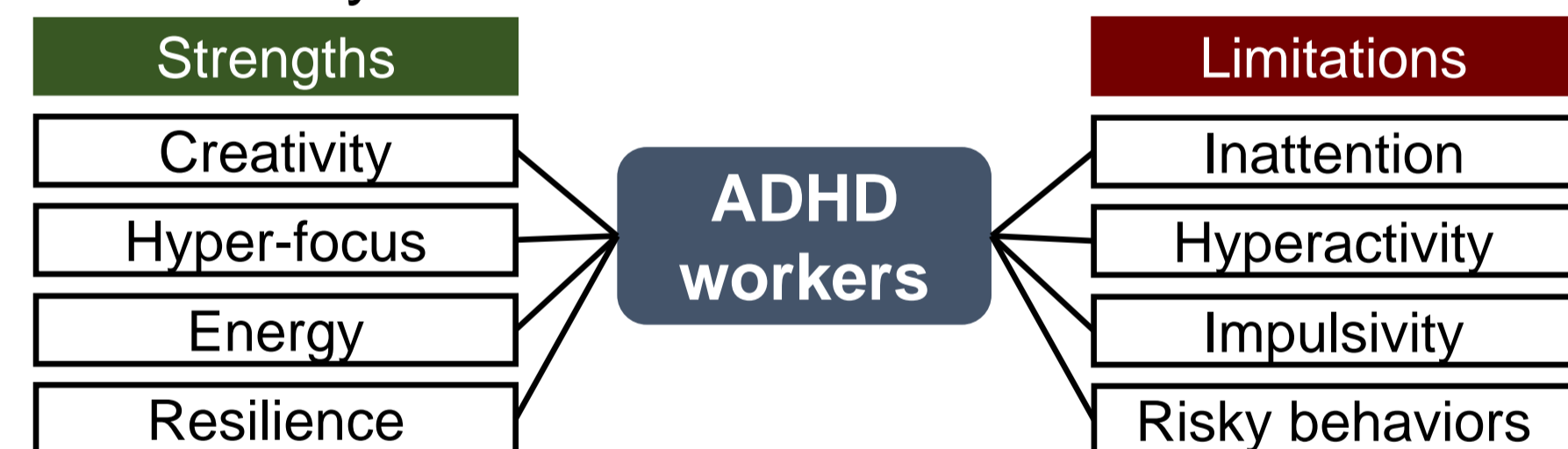
Future Inclusive Safe Construction Sites

- Al-agents will take over construction tasks on future construction sites. Workers will be still in the loop to **build a team with AI-agents** on future jobsites.



ADHD vs Non-ADHD

- 4.2% of workers had ADHD, resulting in 120 million days of annual lost work in the U.S.

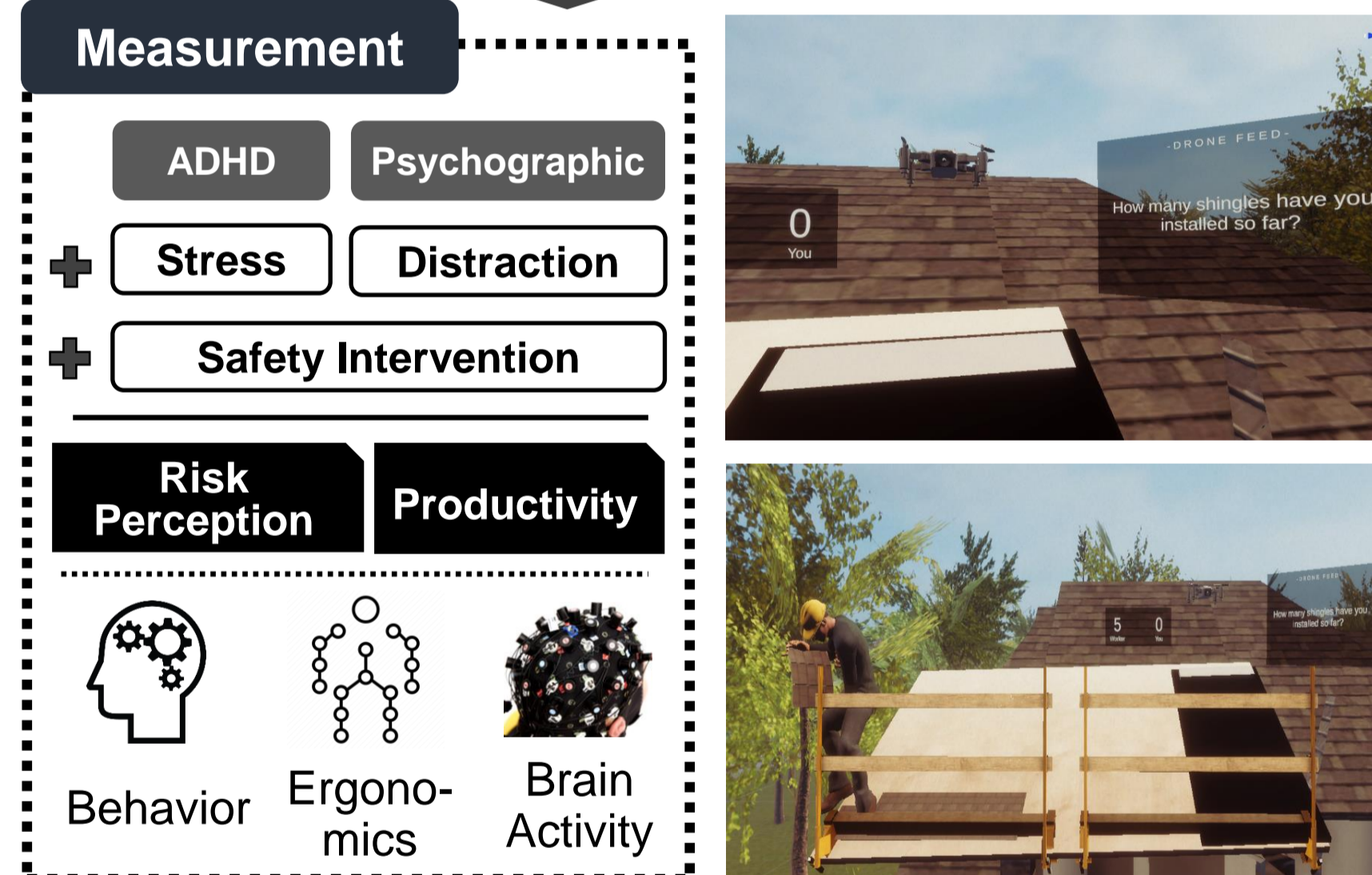
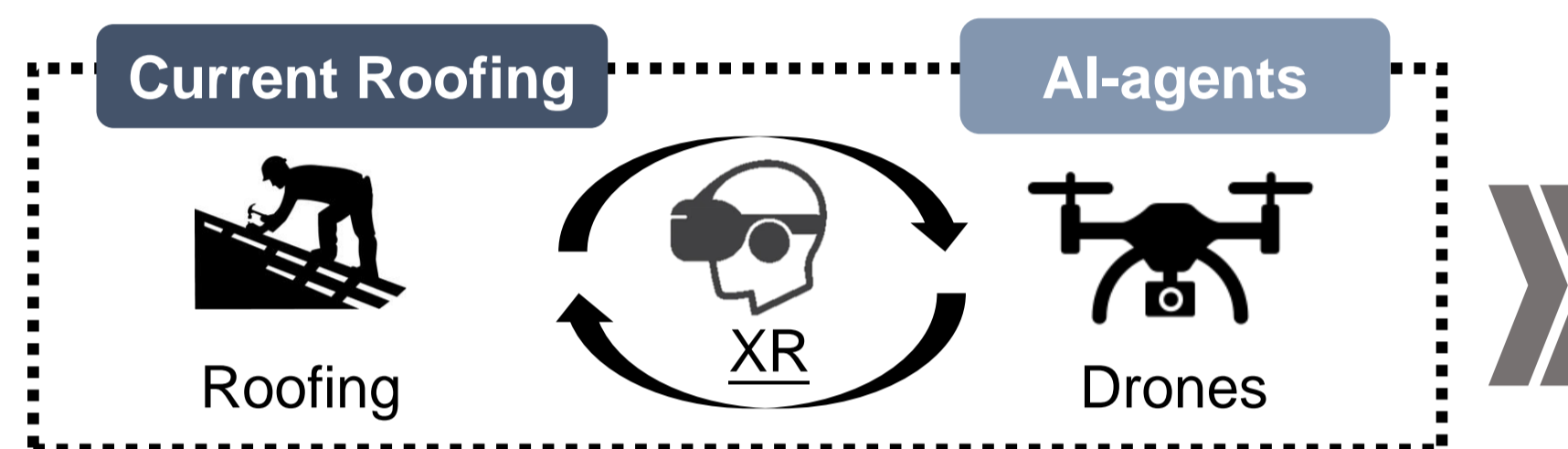


To achieve the safe, inclusive construction site of the future, AI systems must be able to understand, track and predict all types of workers' behavior.

RESEARCH METHODOLOGY

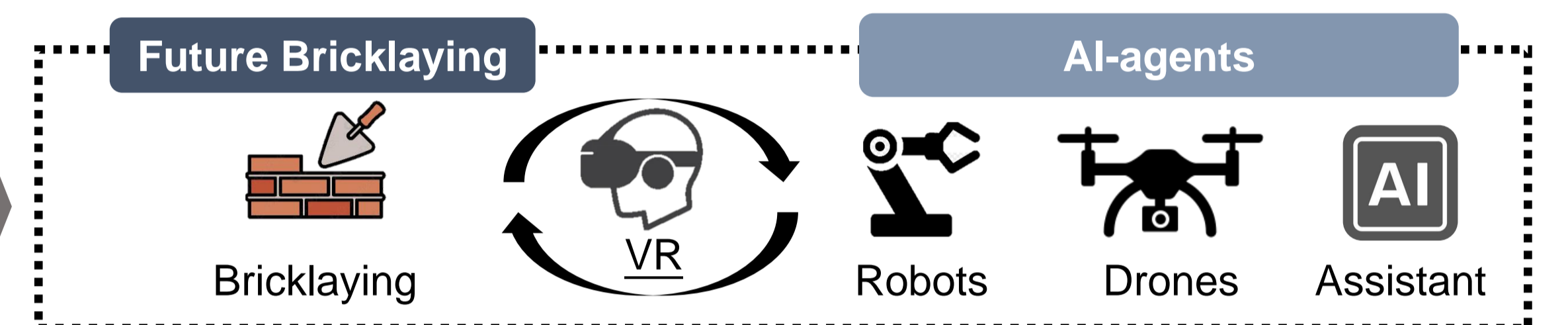
Roofing Experiment

- Q1** How will the **incorporation** of automation into the **current roofing** affect workers' safety behaviors and productivity?
- Q2** How will **safety interventions** affect workers' compensatory and overreliance behavior?



Bricklaying Experiment

- Q1** How will the **teaming** with AI-agents during doing **future bricklaying** task affect ADHD workers' skill acquisition?
- Q2** How does **workload, time pressure, and sudden noise** that cause a distinct influence on safety performance of ADHD vs non-ADHD workers?



POINT OF DEPARTURE

- This research aims to **translate noninvasive biomechanical and psychophysiological metrics data into our AI system** that can **assess, model, and leverage** to predict and improve ADHD/non-ADHD construction workers' safety behaviors **without cultivating technological over-reliance or threats to privacy.**



EXPECTED CONTRIBUTIONS

- Define the specific **conditions** that ADHD workers will execute more **risk-taking behaviors.**
- Understand the **interaction dynamics** between ADHD workers and AI-agents on future construction sites.

Foundational proof of concept for broadly distributing AI teammates in construction workplaces to support employment opportunities and safety outcomes for construction workers with varying abilities.

MERITS & BROADER IMPACTS

- A **feedback loop** for training intelligent AIs to enhance human-machine interactions.
- Understanding the **socioeconomic impacts** of a diverse construction workforce and Understanding **negative impacts** of adaptive AI-agents and wearable technologies.
- Enable **participation** and facilitate **inclusive construction** for workers with **neurodiversity** in the construction industry and beyond.