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CAPturAR: An Augmented Reality Tool for Authoring Human-Involved Context-Aware Applications

CAPturAR is an augmented reality tool using a multi-camera head-mounted device that enables machines to actively observe and rapidly create computer programs based on complex human actions and personal interactions.

Researchers at Purdue University have developed a new tool for augmented reality in enhance machine awareness to human interaction, known as CAPturAR. Currently, machines recognize human interaction in pre-defined contexts but have difficulty recognizing day-to-day personal interactions. Purdue researchers meet this challenge through a helmet-like device with a multi-camera setup that allows machines to observe human activity actively and rapidly author computer programs. Common types of human activity were tested with a prototype device including a participant survey twelve unique users opening a pill bottle at the same time daily which then took a computer 0.65 seconds to replicate and at a position that was off by 3.69 cm on average. In addition, computers were able to learn sequential tasks from participants such as repairing a bicycle wheel.

Advantages:

-Accurate

-Rapid Authoring

-Repeat Measurements

Potential Applications:

-Machine Learning

-Robotics

Technology Validation:

Participant study

Technology ID

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Category

Artificial Intelligence & Machine Learning/Computer Vision & Image Recognition

Robotics & Automation/Perception & Sensing

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