

# Nursing Assistant Robot: Adaptive Robotic Nursing Assistant (ARNA) for Physical Tasks, Patient Observation and Feedback (19053)

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## Technology description

Researchers at the University of Louisville have developed an adaptive robotic nursing assistant (ARNA) that can perform several of a nurse's roles.

### Nursing Assistant Robot

#### Adaptive Robotic Nursing Assistant (ARNA) for Physical Tasks, Patient Observation and Feedback

Nurses are the largest pool of healthcare providers in the U.S. according to the Bureau of Labor [1].

Nurses are a critical team member in a hospital by ensuring the patient receives the best possible care.

Normal job duties consist of communicating between doctors and patients, administering medicines,

teaching nurses aids and most importantly caring for the patient. However, much nursing time is spent on fetching, lifting, and organizing spatially, as well as on repetitive measurements of patients' vital signs, and documentation in electronic medical records of patients.

Researchers at the University of Louisville have developed an adaptive robotic nursing assistant (ARNA) with intentions to free nurses' time to pursue more meaningful interactions, such as counseling patients and family education. ARNA is an omnidirectional mobile platform with a 6-DOF robotic arm, an arm raiser, an instrumented handlebar, a range of sensors and human-machine interfaces. The ARNA can perform several roles such as patient sitter, patient walker and fall detector, documentation of electronic health record, item fetching and object delivery, movement of heavy objects, material handling, vital measurements of patients, teleoperation, telepresence and telemedicine, patient/family communication, and control of environmental factors.

The impact of robots performing routine, uncomplicated care tasks or assisting nurses to perform more complex tasks could have substantial impact on efficiency in acute care hospital environments as well as improved job satisfaction for nurses.

## Advantages

ARNA can perform repetitive or physically demanding tasks for nurses;

Can allow nurses to pursue more meaningful interactions;

ARNA is multifunctional.

Institution

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