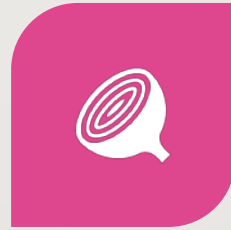


RESEARCH IN ROBOTICS

PRESENTED BY:

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M.S IN MECHANICAL ENGR,
UT ARLINGTON.

SYNOPSIS



WHY CHOOSE
STEM?



RESEARCH IN
ROBOTICS



WHAT DO I
DO?



RESULTS OF
RESEARCH



FUTURE
WORKS



QUESTIONS.

WHY CHOOSE STEM?



You get to live and work on the cutting edge.



You can count on more job security in a STEM career.



You learn transferable skills.



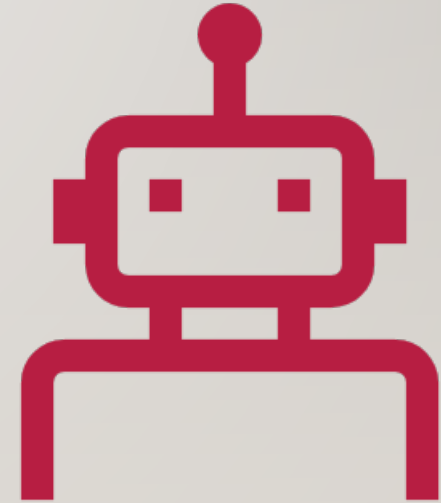
You will find that there is something for everyone.



You see the promise in STEM jobs by the numbers:

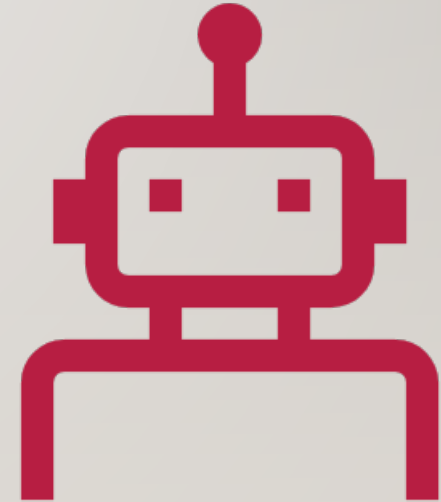
RESEARCH IN ROBOTICS

- An interdisciplinary team consisting of faculty and students from computer science, theatre arts, social work, and kinesiology worked together on this study.
- First, focus groups were held with parent caretakers and the adult children that included semi-structured interview questions aimed at gathering data related to best practices for the programming of the robot unit, Socially Assistive Robot (SAR), Pepper.

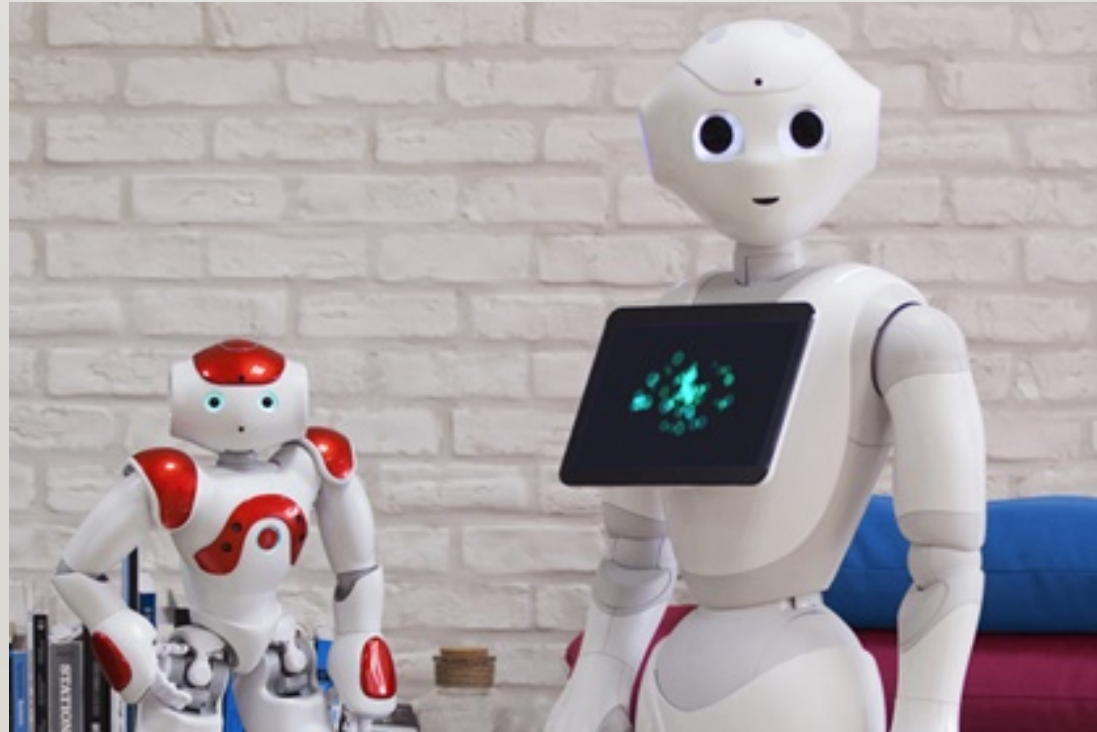


RESEARCH IN ROBOTICS

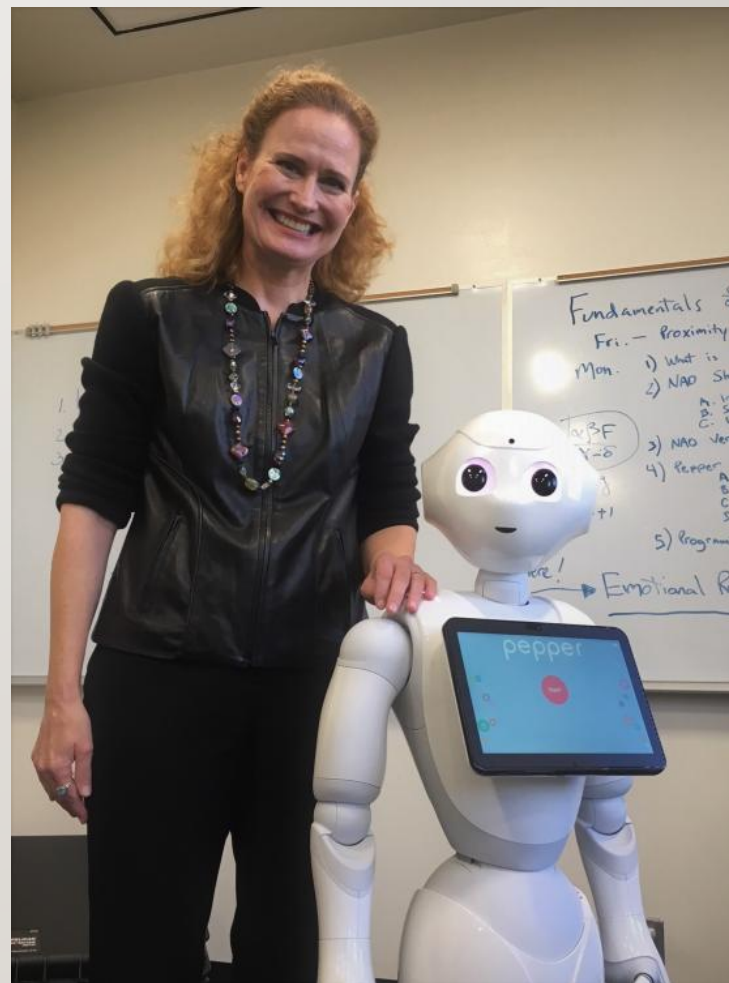
- Following the analysis of the focus group data, the research team designed a program for adult children with special needs that will offer a time of respite for their caretakers.
- This programming module utilizes theatre and engineering-based methodology, e.g., story telling, Fist bump, mirroring, and builds in various levels and reward systems to enhance the interaction with the participants and to allow respite for the caretakers in an adjacent room.



RESEARCH IN ROBOTICS



DR. JULIENNE GREER DIRECTOR OF EMOTIONAL ROBOTICS LIVING LABORATORY



WHAT DO I DO?

- **Sole programmer** for social robot, **Pepper** (Softbank Robotics) for externally funded, Georgia Tech, National Institute on Disability, Independent Living and Rehabilitation Research (**NIDILRR**).
- Engineered Pepper to positively interact in a **one-on-one activity** featuring **human-centered behavioral speech** and movements to engage the participants.



WHAT DO I DO?

- Experience in working with **facial recognition, emotions recognition patterns, voice commands and multiple responses** depending on the answers obtained from the user.
- **Funded by the USA** government, the project was a huge success at Georgia Tech and planning to improve this pilot study.

RESULTS OF RESEARCH

- There were both Pre and Post tests conducted by the team, where the parents and the young adults were given a set of questionnaires to answer.
- The parents could see the interaction of their child with Pepper and everyone felt overwhelmed.
- The participants exhibited high interest and tried their level best to cope up with the activities done along with Pepper.
- Their motor skills seemed to have worked amazingly well and intact when performing any kind of activity such as mirroring, Tai-Chi dance and many more.

FUTURE WORKS



There exists a basic misconception among many human beings that a robot is evil and it might take over the jobs of humans.



Basically, these humanoid robots are social robots which help as a social companion in our homes, by giving us company and interacting with us generally.



This research will be continued by programming Pepper to detect the feelings/emotions of the humans and start a conversation in such a way they feel relaxed.



Various other activities can be added which helps children with autism and for many other activities.

INFORMATION:

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- DR. Julienne Greer
- Theatre and Arts Professor
- Director of Emotional Robotics Living Laboratory (UTA)



QUESTIONS?