Disrupting the Dementia Landscape: The Promise of Future Technology

Alex Mihailidis, PhD PEng
Professor & Scientific Director
University of Toronto / AGE-WELL NCE

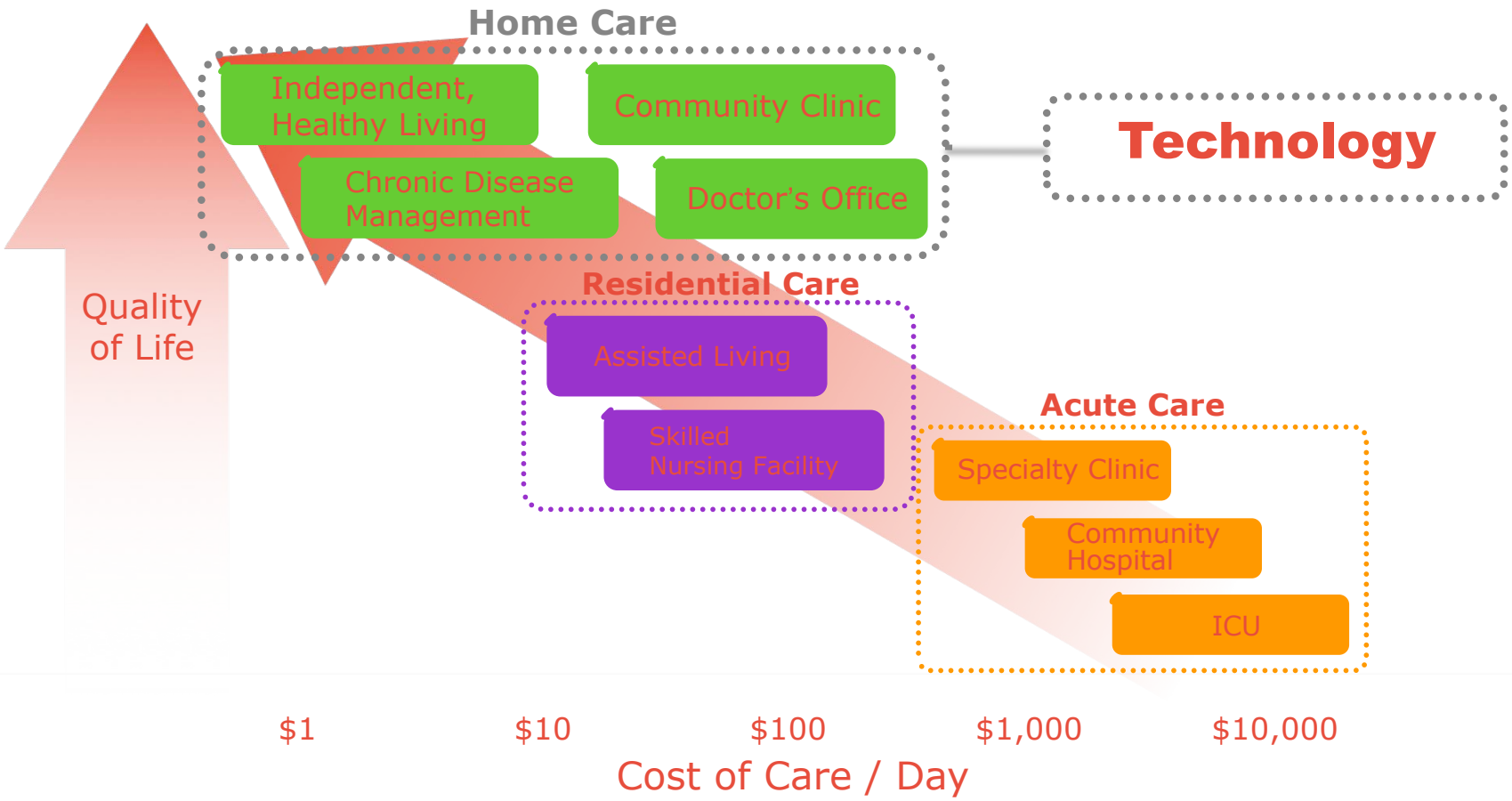
Aging Well

"Healthy aging" is the ability to remain independent in our lives, and to actively participate in society (the way we want to)

We can all age well, even in the face of disease, impairment, and disability

Technology as a Solution

From Reactive to Proactive Care



There is

STRONG POTENTIAL

for technology to support

HEALTHY & ACTIVE AGING

...However


We NEED
to do
BETTER

Failure to Launch

There are very few devices available, with many of them being too expensive and difficult to use

Why is it like this?

The needs of older adults are complex, and are even more so in the face of specific impairments and diseases.

More often than not, an understanding of these users' needs is not part of a project.

There has been a "silo" mentality in this field that has resulted in poor outcomes.

Current technologies are stigmatizing

It’s a moving target

Older adults (and their caregivers) are becoming more tech savvy

There are growing expectations on the integration of technologies into their daily lives


Disruption
NEXT EXIT

Disruptive Technologies

….when introduced, either radically transforms markets, creates wholly new markets or destroys existing markets for other technologies.

Our goal MUST BE to develop disruptive technologies that can enable aging-in-place, and to support caregivers and families.

Disruption requires INSPIRATION

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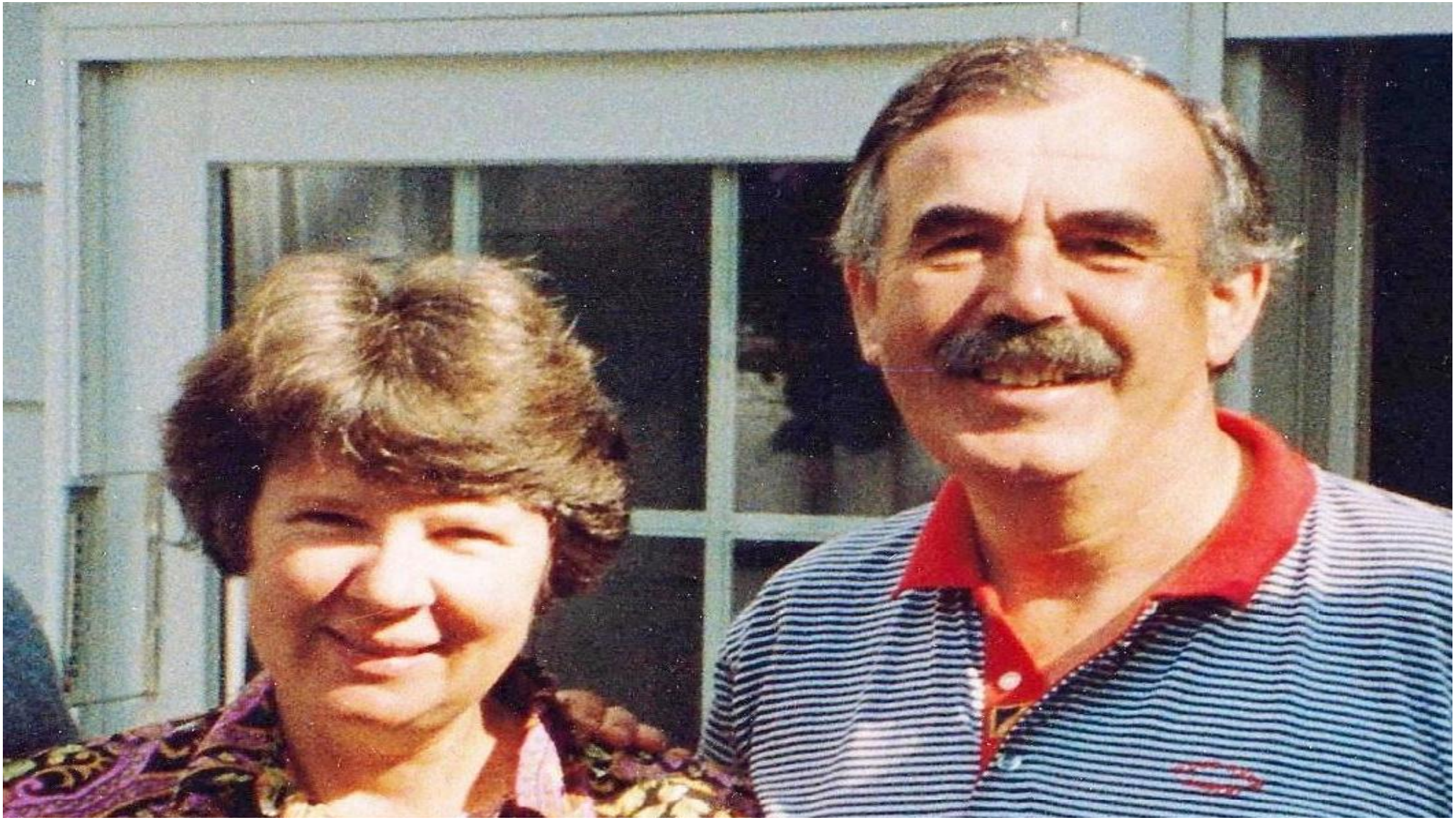

Disruption requires NEW WAYS OF THINKING

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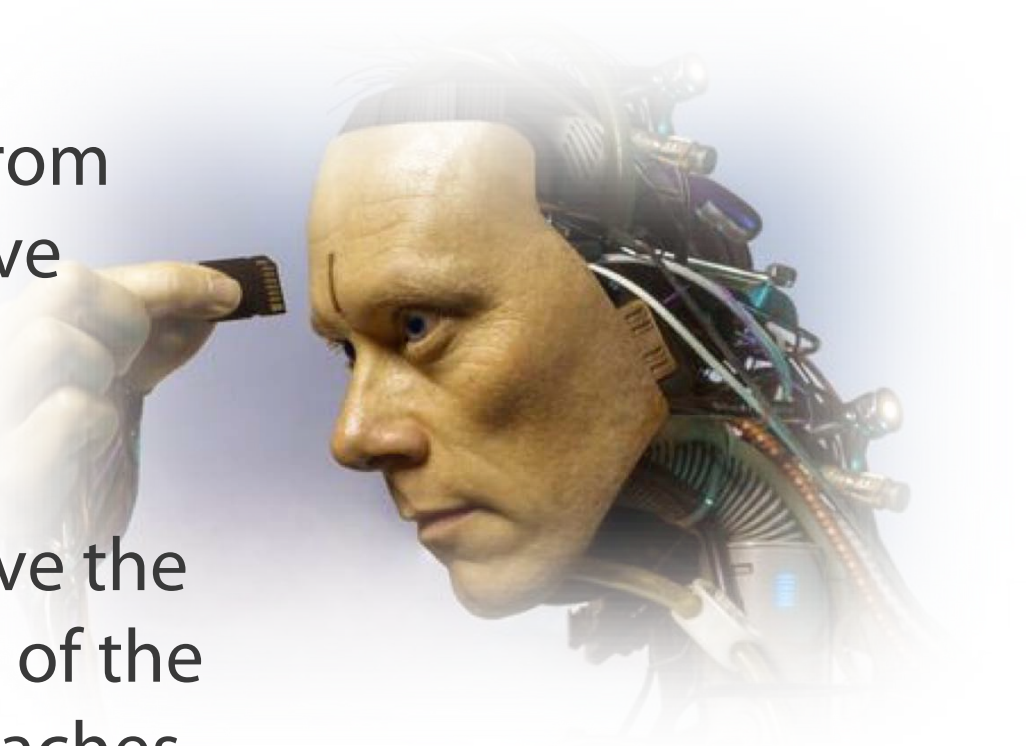
Learning from other Disciplines

New technologies and approaches are emerging from other fields (e.g. AI, cognitive computing)

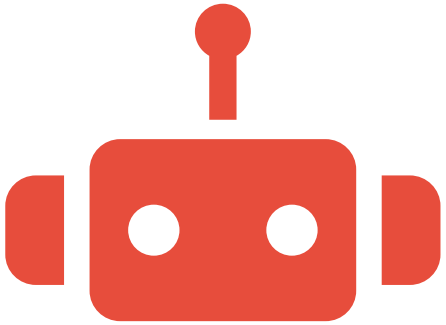


These new technologies have the potential to address several of the limitations of current approaches

Emerging Areas

New approaches are leading to new promising areas of research and leading edge technologies

Smart Homes



Robotics

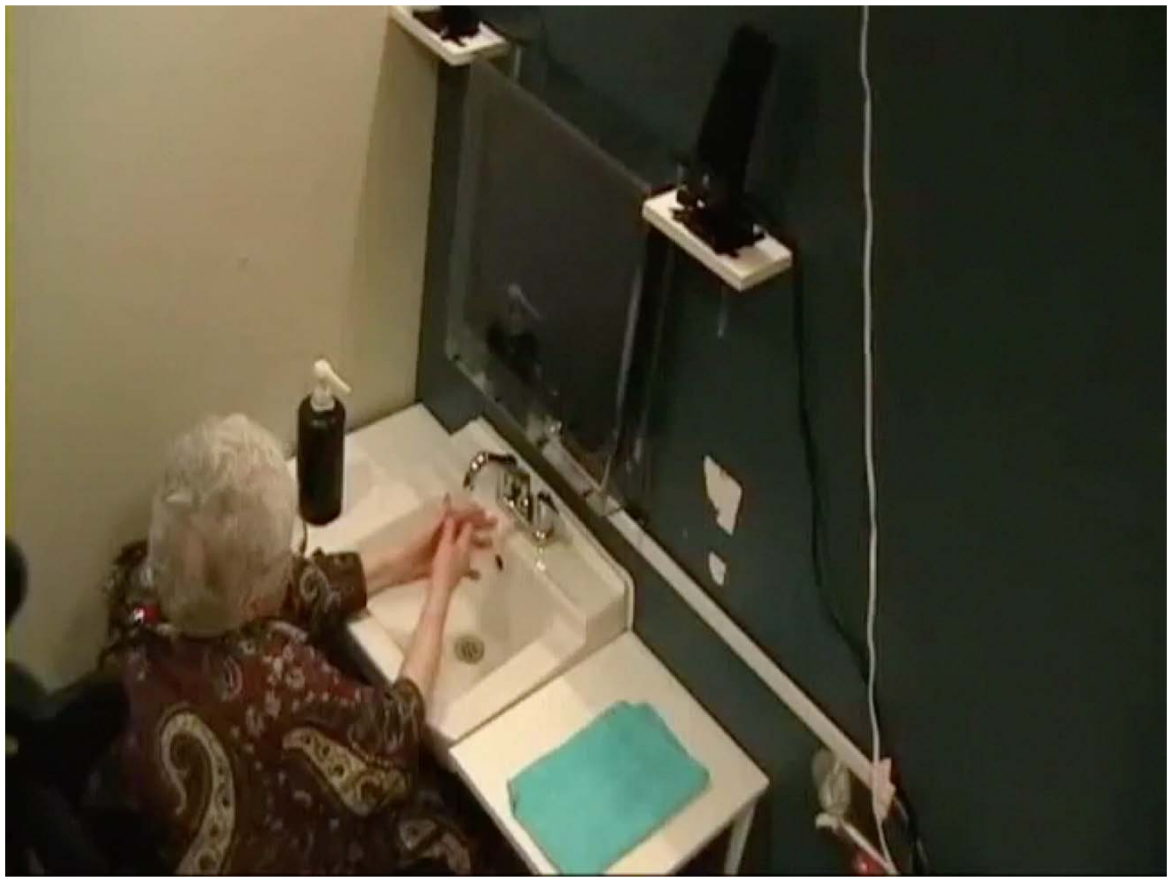
Smart Homes

ADL Support

An intelligent cognitive assistive technology that tracks a user through an ADL, providing cues when necessary.

The COACH

Cognitive Orthosis for Assisting Activities in the Home



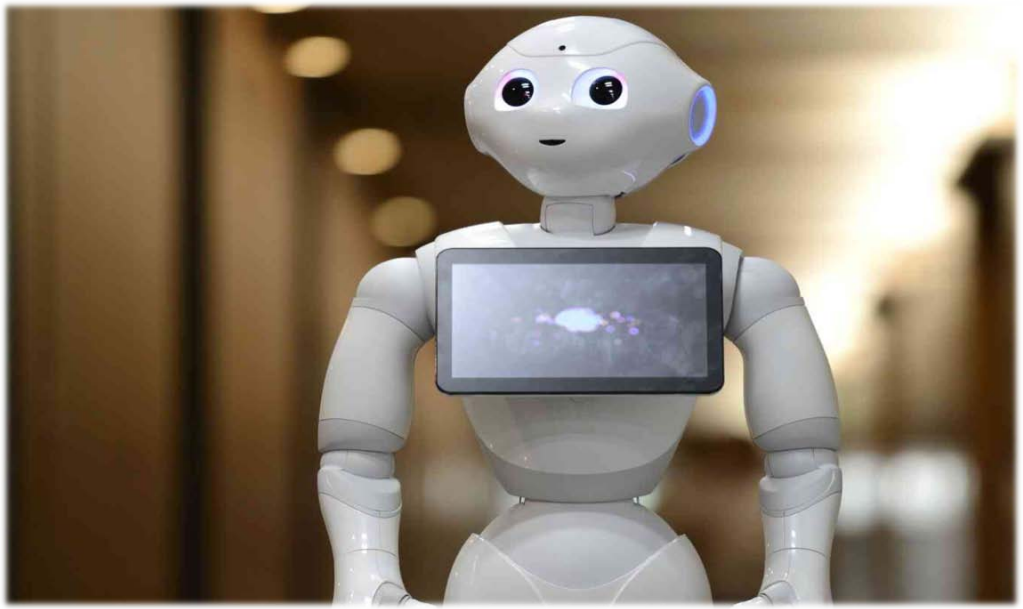
Ambient-Based Monitoring

Many seniors are required to monitor and report on various chronic conditions (e.g. diabetes, CHF)

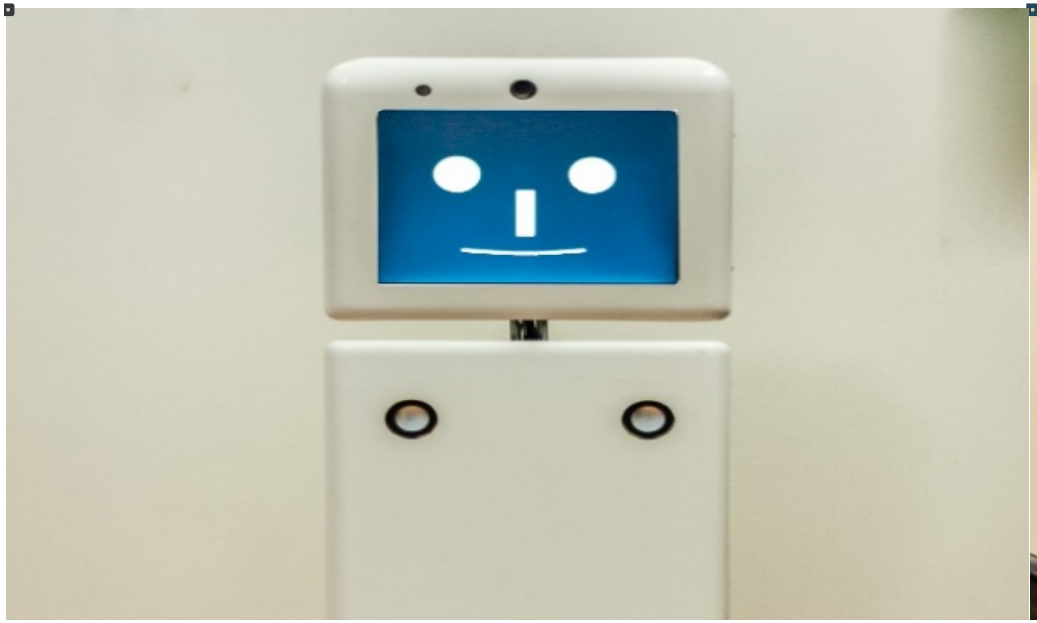
They are required to use technologies to collect data

Often these technologies have poor usability leading to poor adherence

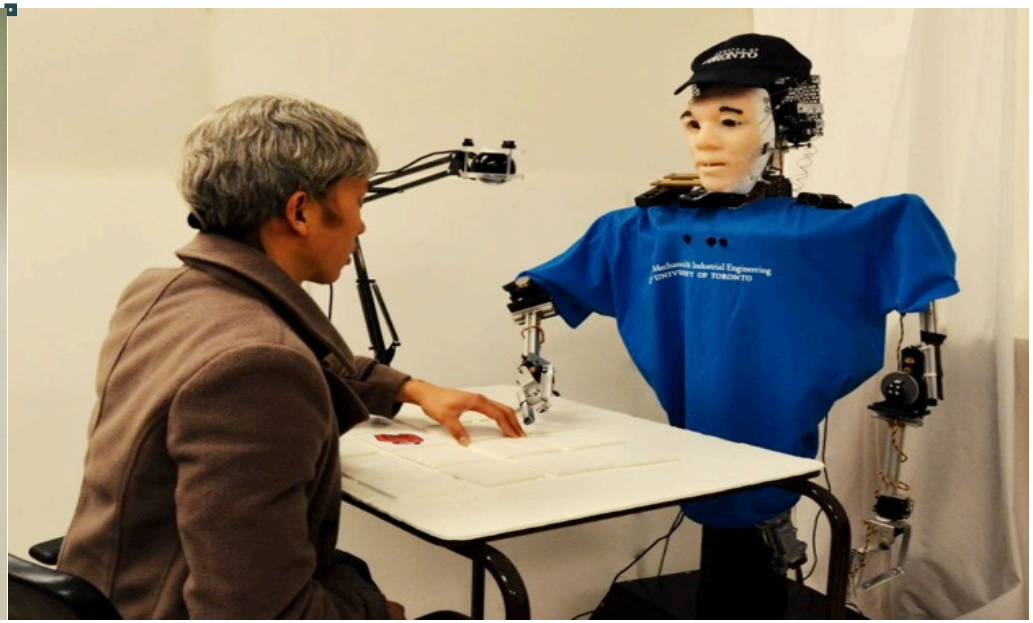
These ARE the droids you are looking for....



Potential Robotic Approaches



Social Robots



Cognitive Robots

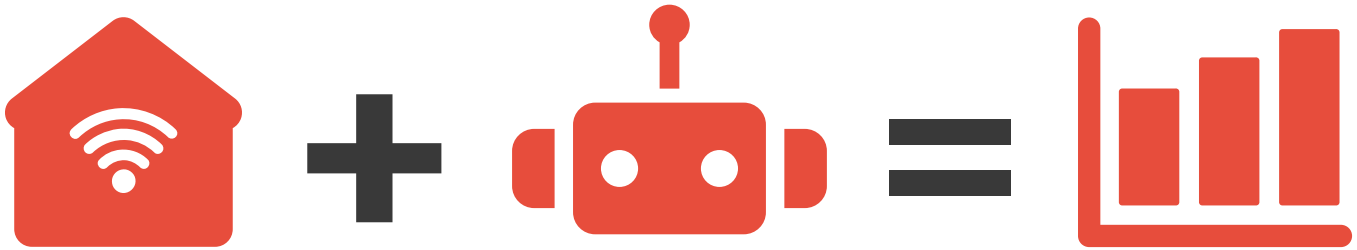
Robotics – Driverless Cars

MAY BE THE DRIVER. One day your car may speed along an electric super-highway, its speed and steering automatically controlled by electronic ·dded in the road. Travel will be more enjoyable. Highways will be made safe—by electricity! No traffic jams . . . no collisions . . . no driver fatigue.

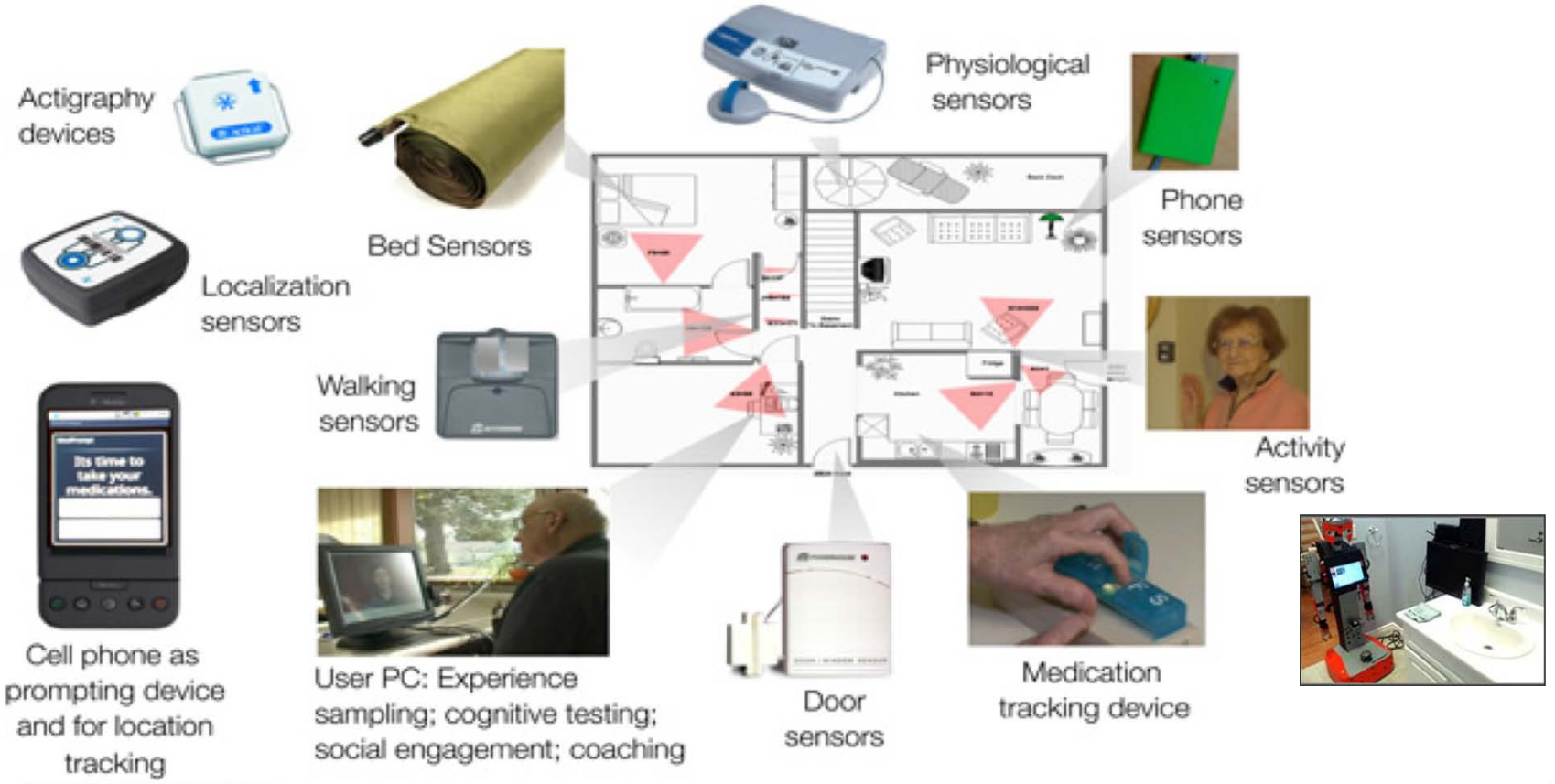
"The self-driving car — a godsend for older Americans — is now on the horizon"
– AARP (2015)

Imagine the Potential

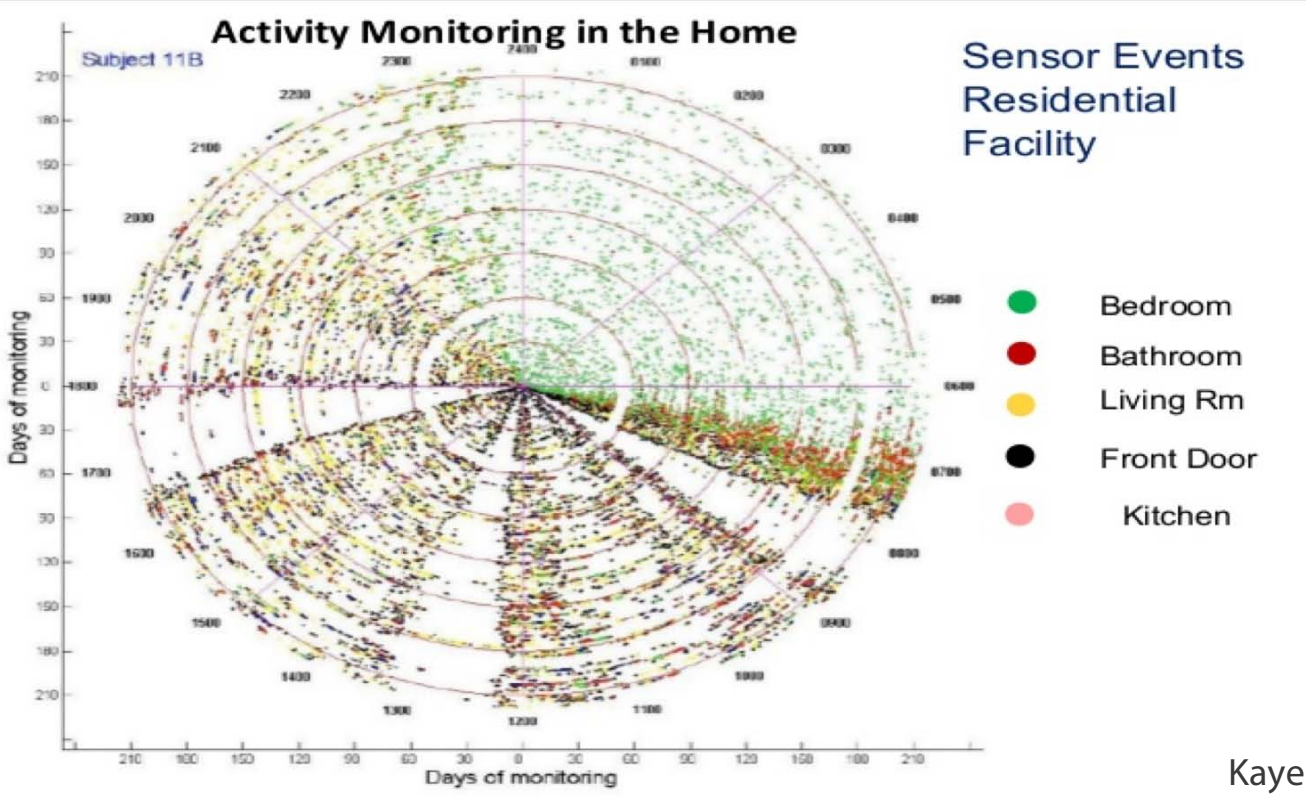
The combination of different approaches, modalities, and sensors allows us to collect data!



Big Data in the Home



Big Data – Patterns of Living



Kaye et al. (OHSU)

Being Proactive, not Reactive

Big data allows us to look forward and predict changes in health before they even occur

Predicting Cognitive Impairment

3 months

85%

ACCURATE

The current landscape needs to change in order for these new innovations to make it to the marketplace

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Accept risk

Change delivery models

The current landscape needs to change in order for these new innovations to make it to the marketplace

Work collaboratively

Rethink the way we design

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The Technology is not enough…

We have to examine issues around service delivery, practice, & policy*

*Tech MUST be part of the National Dementia Strategy

New Delivery Models

The majority of new technologies to support older adults are NOT medical devices

They are being developed as consumer products that could be purchased directly by the consumer

More importantly, there is a grassroots movement in the field where consumers (e.g. caregivers) are building their own solutions

Disruption requires a COLLABORATIVE and TRANSDISCIPLINARY approach

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AGE-WELL – Canada's Tech & Aging Network

AGE-WELL was established in March 2015 with funding from the Networks of Centres of Excellence (NCE) Program through the Canadian Federal Government

The goal of an NCE is to bring together the best and brightest in a specific sector, working towards having social and economic impact

AGE-WELL received $36.6M (2nd largest in NCE history) from 2015-2020, with a potential 15 year mandate

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AGEWELL by the Numbers*

*as of September 2017

Canada's Technology and Aging Network

37
MEMBER UNIVERSITIES AND RESEARCH CENTRES
across Canada

398
HIGHLY QUALIFIED PERSONNEL (HQP)

150+
RESEARCHERS

141
Industry & Community Partners

44
Federal & Provincial Departments & Agencies

$36.6M FUNDING (2015-2020) from the Networks of Centres of Excellence (NCE)

$22M+ CASH AND IN-KIND Contributions from Partners

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We Produce Real-World Products

Technologies

Services

Policy & Practice

Innovations being Developed

New tools for the inclusion of end-users

New novel sensors to measure activity levels

Non-contact physiological monitoring systems

Social and personal robotics

Technology to monitor and assess mental health

Technologies for socialization and connectedness

Understanding policies and regulatory issues

Going Forward

The time is now!

Being incremental in this field is no longer acceptable

The technology may be the easy part – the ethical, social, and cultural aspects need to be considered and incorporated throughout the process

For More Information

Alex Mihailidis, PhD PEng

alex.mihailidis@utoronto.ca

@agewell_nce / @iatsl

www.agewell-nce.ca / www.iatsl.org

UNIVERSITY OF TORONTO

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