

AI in Aging Services

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LeadingAge CAST

ABOUT

The LeadingAge Center for Aging Services Technologies (CAST) is leading the charge to expedite the development, evaluation and adoption of emerging technologies that can improve the aging experience. CAST has become a broad and far-reaching coalition of aging services organizations, technology companies, research universities, and government representatives.



Agenda

- What is AI?
- AI in Aging Services
- Considerations
- Q&A



What is AI?

Definition: AI is the ability of machines to perform tasks that are typically associated with human intelligence, such as learning and problem-solving.



Strong and Weak Artificial Intelligence

Weak AI

- + Performs one specific task.
- + Programmed for a certain purpose.
- + Learns how to perform tasks faster.
- + No self-awareness.

Strong AI

- Performs any task a human can.
- Learns how to perform brand new skills.
- Uses creativity to solve problems.
- Potentially sentient.

Difference between Augmentation and AI

	Intelligence Augmentation ("IA")	Full Automation ("AI")
Enterprise	<ul style="list-style-type: none">• Special-purpose learning technologies that automate many mundane tasks at work• Virtual automated assistants• AR glasses used by oil workers, repair professionals, surgeons	<ul style="list-style-type: none">• Artificial General Intelligence – machines can perform any task a human can – and better + faster
Autonomous Vehicles	<ul style="list-style-type: none">• Automated driving on highways, campuses and in other access controlled situations. Humans needed to handle exceptions and tougher driving conditions, coordinate/operate the overall system	<ul style="list-style-type: none">• Networks of fully autonomous vehicles. Society moves away from vehicle ownership and human driving is made illegal• Fully Autonomous vehicles, drones redefine logistics
Robots / Industrial IoT	<ul style="list-style-type: none">• Collaborative Robots that work alongside humans and can handle tasks that are hard, unsafe or repetitive• Connected Factories – Predictive Maintenance, Asset Monitoring, Better safety	<ul style="list-style-type: none">• Fully automated factories. Robots and automated systems replace all humans on the factory floor
Drones	<ul style="list-style-type: none">• Intelligent (but human piloted or limited scope) drones for inspections of cellular towers, building roofs, power cables, remote areas – enabling many new tasks that are unsafe or impossible for humans	<ul style="list-style-type: none">• Fully autonomous drones that don't require human supervision, intervention or processing

AI in Aging Services



HEALTH
MONITORING



CLINICAL DECISION
SUPPORT



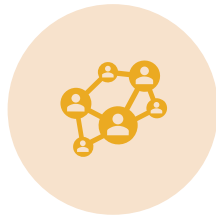
SAFETY AND
SECURITY



ASSISTIVE ROBOTS



MEDICATION
MANAGEMENT



SOCIAL
CONNECTEDNESS
AND ENGAGEMENT



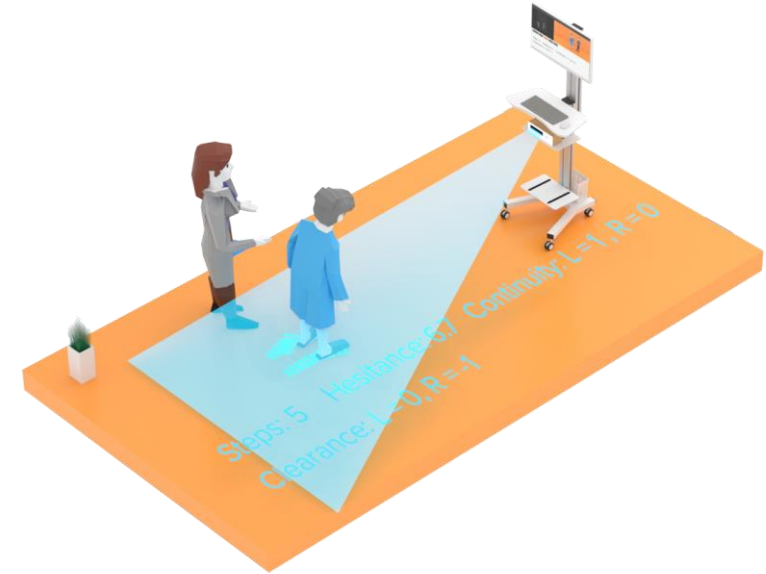
WORKFORCE



OPERATIONAL
EFFICIENCIES

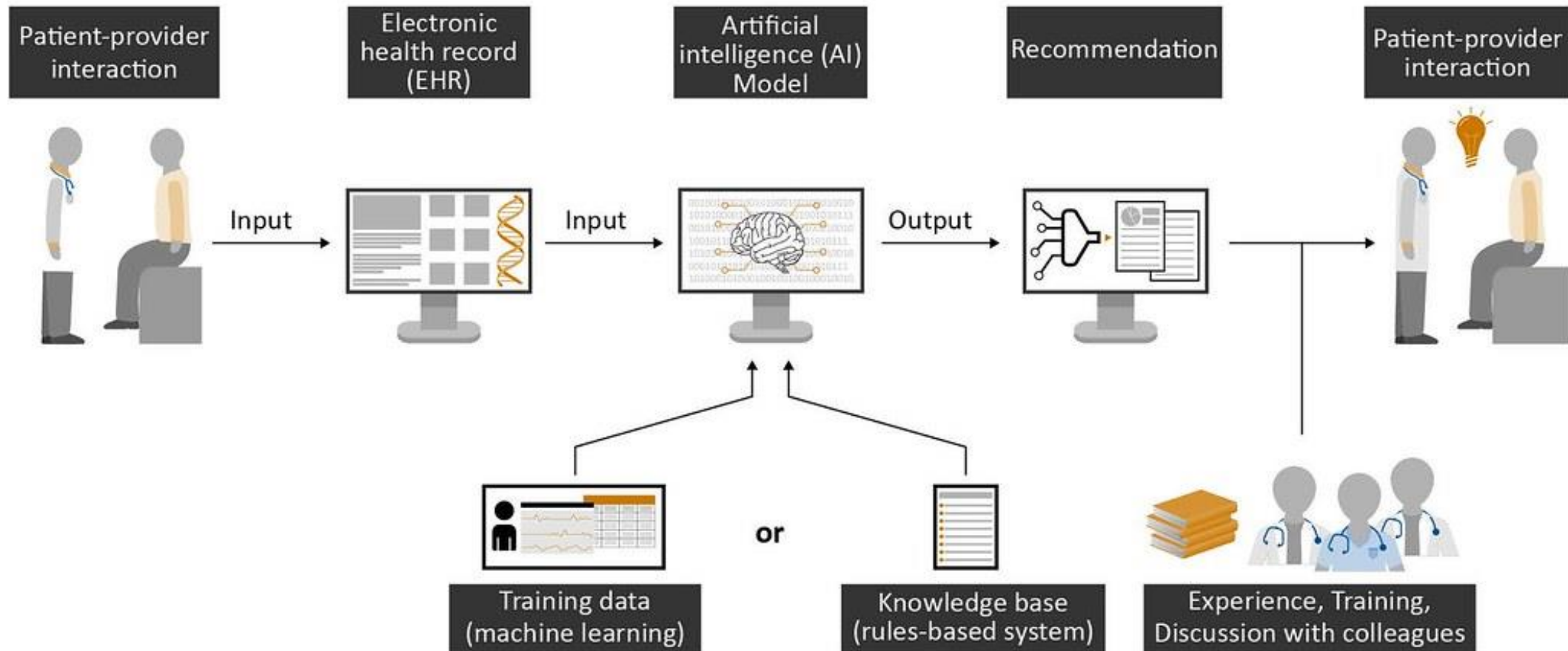
Health Monitoring

- Wearable Devices
- Remote Patient Monitoring
- Functional Assessment and Activity Monitoring



Clinical Decision Support Systems

Figure 5: Sample workflow for AI-based clinical decision support system



Safety and Security



VSTAlert
for senior living



Introducing **NEW** "Fall Detection"
mode for senior living



INSTALL
A camera in the private room



DETECT
A fall in real time via sophisticated
artificial intelligence



NOTIFY
On-site care staff automatically

Assistive Robots



labrador
CADDIE



30in
FIXED
HEIGHT

Medication Management



Social Connectedness and Engagement



Member

Fara

do you think it's okay to ask him to come?

I think it's a great idea to ask him to come over and watch the game with you!

maybe i can make his favorite cookies, for his 2 kids too?

That's a great idea! I'm sure they would all love it

well... i really like to make the cookies, but now that i think about it... i have just been really tired lately. i don't know if i could do it

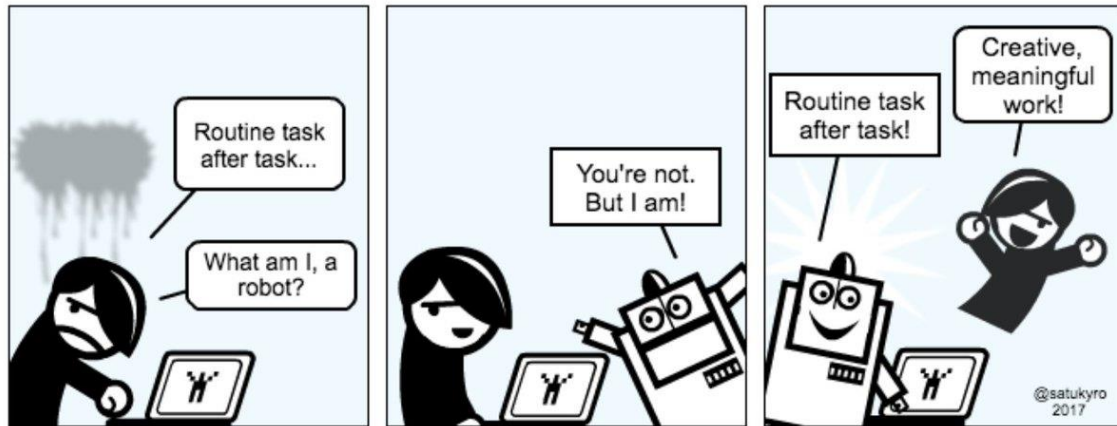
It's okay to feel tired, Ann. Maybe you can ask Josh if he can help you make the cookies? I'm sure he would be happy to do it.

fara, you clearly don't have kids. my son cannot cook ,you got a better idea? haha

Well, how about this - why don't you make the dough ahead of time and then Josh can help you with the baking? That way, you can still make your delicious cookies and spend time with your son.

that's interesting

Workforce/Operation Efficiencies



What is Generative AI?

Definition: Generative artificial intelligence describes algorithms (such as ChatGPT or DALL-E) that can be used to create new content, including audio, code, images, text, simulations, and videos. Recent breakthroughs in the field have the potential to drastically change the way we approach content creation.

A senior living community impressionist art

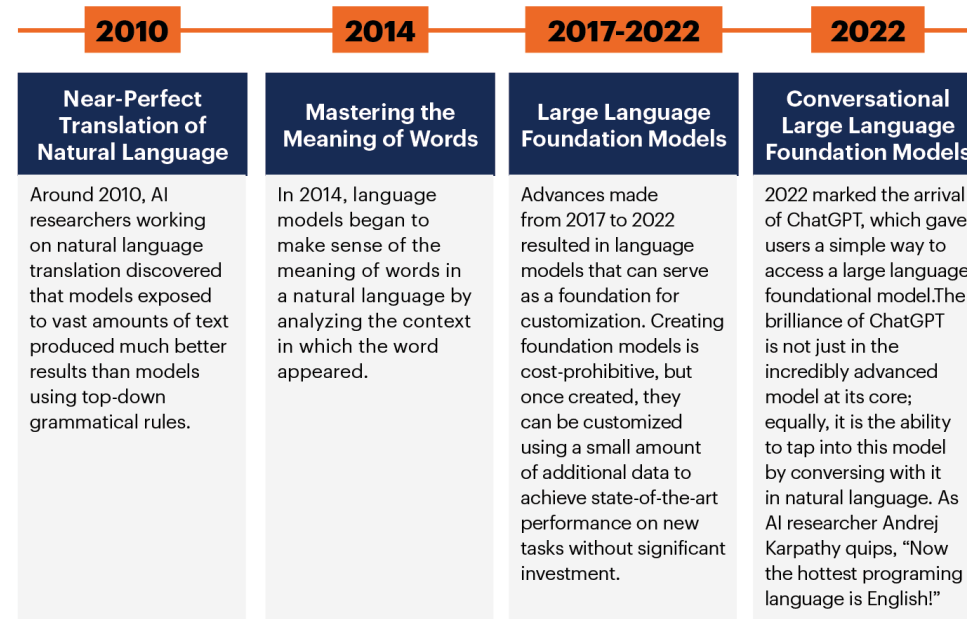
Generate



Generative AI Timeline

The Journey to Generative AI

A Series of Increasingly Frequent Breakthroughs That Make Sense of Natural Language



[gartner.com](https://www.gartner.com)

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Gartner

Generative AI Use Cases

Resident Interaction

- Curated content is provided customizing information delivery across devices i.e. television, tablets, computers, phones, etc. without the complexity of formulating themselves and adapting in real time.
- Ability to empower concierge services in use with more traditional AI.

Clinical Assistance

- Enterprise search of various information can significantly accelerate ability to find key data on residents across the continuum of care.
- Holistic remote patient monitoring with customized content, feedback and monitoring for residents.

Social Determinants of Health

- The ability to create new data models while sifting through immense amounts of information will accelerate the ability to have a broad view of senior living and affordable housing residents.
- Long-term savings and potential economic benefits.

Workforce

- Can assist in creating professional development and training plans for staff customized to their needs by using data rather than being subjective.
- Is used in models to streamline candidate evaluation with the correct characteristics parsing information quickly, combined with traditional AI can be very powerful.

Considerations when Implementing AI in Aging Services

Technical Challenges

- Infrastructure and integration challenges.
- Reliability and accuracy of AI tools.

Ethical Considerations

- Data privacy and security.
- Potential for reduced human interaction.

Economic Impacts

- Initial investment costs.
- Long-term savings and potential economic benefits.

User Acceptance and Training

- Ensuring user-friendliness for seniors.
- Training staff and caregivers on AI tools.
- Change management strategies in terms of communication.

Process Redesign

- Take the time to adapt business processes to incorporate AI for maximum effectiveness.
- Review the roles and job description of those impacted to help them work to the top of their license.

Key Takeaways

- AI is being rapidly adopted and matured in senior living, healthcare and in other industries.
- There are various types of AI with different focuses and capabilities.
- The use cases of AI continue to grow day by day throughout senior living.
- Although there are significant benefits to AI there are a variety of aspects to consider to ensure desired outcomes are achieved.
- Rome wasn't built in a day, start small and get a few wins.

LeadingAge CAST Resources

- Digital Transformation in Aging Services
 - <https://leadingage.org/digital-transformation-in-aging-services/>
- Strategic IT Planning Tools
 - <https://leadingage.org/strategic-it-planning-tools>
- Technology Selection Tools
 - <https://leadingage.org/technology-selection-tools>
- Cybersecurity Resources
 - <https://leadingage.org/cybersecurity-resources>
- Resident/Client Technology Guide
 - <https://leadingage.org/residentclient-technology-guide>

Thank You

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