Joint Artificial

JAIN

Intelligence Network

Netherlands
Innovation
Network

Dutch Israeli Mini-Symposium on AI and Dementia

22 December 2021 11:00-13:00 IL time 10:00-12:00 NL time

Webinar through zoom
https://us06web.zoom.us/j/87464170943?pwd=MHNNcUthbGs4eWd4aVdua01mWjErZz09

YouTube Live

Registration: https://www.eventbrite.com/e/dutch-israeli-mini-symposium-on-ai-and-dementia-tickets-170275164601

Objective

Israeli and Dutch companies are jointly developing new products and services for people living with dementia and their family carers. To be successful these products need to be attuned to the needs of people with dementia and carers and developed in co-creation. Together with involved stakeholders these new products need to reach the world market of 50 million patients worldwide which is expected to grow because of the greying of the world population. There is an urgent and growing need for effective products.

Background

Dementia has a major impact on the quality of life and entails a high perceived burden of disease. Investments in technological innovations to better meet the individual needs of people with dementia and their family carers are crucial to improve quality of life and significantly reduce not only the individual but also the societal burden of dementia.

Over 50 million people worldwide live with dementia. This number will nearly double every 20 years, to 82 million by 2030 and 152 million by 2050[1]. Much of the increase will take place in developing countries. The number of people with dementia in Europe will grow rapidly from around 9.7 million in 2020 to more than 18.6 million in 2050. At the same time, in all countries the number of people available to provide care - as informal or professional carers - for patients (and elderly in general) will decrease substantially in the coming decades.

The global dementia drugs market was valued at approximately USD 12,736.06 million in 2020 and is expected to witness a revenue of USD 19,655.10 million in 2026, with a CAGR of 7.87% over the forecast period. The outbreak of the COVID-19 pandemic is expected to have a significant impact on the Dementia drugs market. According to a research study published in Jan 2021 in Nature Reviews Neurology, the population with dementia are at high risk of contracting COVID-19 infection. Furthermore, older populations with dementia are also more likely to have more severe disease consequences than those without dementia.

To maintain the quality of life of people with dementia or other cognitive impairments, smart applications need to be developed to provide effective support, based on artificial intelligence, and keep the health care available and affordable.

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[1] https://www.mordorintelligence.com/industry-reports/dementia-drugs-market

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Israeli Dutch Innovation Center (IDIC)
Netherlands Embassy in Israel
Abba Hillel 14, Ramat Gan, Israel

Target audience
Israeli and Dutch companies, care providers, professional carers, universities, governmental bodies, and healthcare investors

Program

11:00-11:05   *Welcome note*

       Dr. Racheli Kreisberg, Innovation Attaché, Netherlands Embassy in Israel and Israeli Dutch Innovation Center (IDIC)

       Mr. Hans Arnold, Founder JAIN, the Netherlands
       Marieke Monroy, deputy Netherlands Embassador to Israel

11:05-11:10   *Urgency to deliver products for people with dementia and call for worldwide cooperation*
       Mr. Marco Blom, Alzheimer Nederland, The Netherlands

11:10-11:25   *MRI of the aging brain*
       Prof. Yaniv Assaf, Department of Neurobiology, George S. Wise Faculty of Life Sciences and Sagol school of neuroscience, Tel Aviv University

11:30-11:45   *Artificial Intelligence and the Challenges of Living with Dementia: An interdisciplinary, multi-lab approach to design warm smart care solutions*
       Prof. dr. Wijnand Ijsselsteijn, Eindhoven AI Systems Institute (EAISI), Technical University of Eindhoven, the Netherlands

11:50-12:05   *DELPHI (Direct Non-invasive Brain Network Electrophysiology) for the Evaluation of Brain Health*
       Prof. David Tanne, Director, Stroke and Cognition Institute, Rambam Health Medical Center, Haifa, Israel

12:05-12:20   *Solution "market failure- and togetherness Israel and the Netherlands"*
       Dr. Henk Herman Nap, Expert eHealth, Vilans, the Netherlands

12:20-12:35   *Using AI to re-think our approach to Alzheimer's disease*
       Prof. Shahar Arzy, Faculty of Medicine and the Department of Cognitive Sciences, Hebrew University of Jerusalem

12:35-12:50   *Challenges to overcome in delivering new products*
       Mr. Fokko van der Woude, CEO, Tolooba BV, the Netherlands

12:50-13:00   *Discussion*
       Moderated by Mr. Hans Arnold, Founder JAIN, the Netherlands

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Biosketches Speakers

Prof. Yaniv Assaf, Department of Neurobiology, George S. Wise Faculty of Life Sciences and Sagol school of neuroscience, Tel Aviv University

Prof. Yaniv Assaf is a neuroscientist and a biophysicist who joined Tel Aviv University in October 2004. Prof. Assaf received his graduate degrees in chemistry from The Tel Aviv University followed by joint post-doctorate fellowship at Tel Aviv Sourasky Medical Center and the National Institutes of Health (NIH). In his post-doc Prof. Assaf investigated different aspects of neuronal white matter mapping with MRI including implementation white matter mapping techniques for assessment of tissue damage in multiple sclerosis, stroke, and dementia (Alzheimer's disease). In addition, Prof. Assaf developed new analysis tools that enhances the accuracy and sensitivity of MRI based white matter mapping techniques (the CHARMED model). At Tel Aviv University, Prof. Assaf focuses on developing MRI techniques and analysis frameworks that will enable indirect measurement of micron-scale structures thorough low-resolution MRI. The main hypothesis behind Prof. Assaf's research is that brain morphology and function are linked. Under this topic the Assaf group focuses on extracting micron scale structures of both white and grey matter in animals as well as in the human brain. This is done with the aim of enhancing the information extracted from MRI beyond the resolution limitation of the millimeter scale. Current research in the group includes the characterization of the assembly of neuronal networks to produce micron and sub-micron fiber bundles mapping throughout the brain and imaging the local arrangement of cellular structures in the cortical grey matter layers and their relation to the functional anatomy of the human brain.

Prof. Shahar Arzy, Computational Neuropsychiatry Lab, Hebrew University in Jerusalem, Israel

Professor Shahar Arzy is a researcher in cognitive neuroscience (PhD) and a Board-Certified Clinical Neurologist (MD), specializing in cognitive/behavioral neurology and neuropsychiatry with particular interest in Alzheimer's disease. He established the Computational Neuropsychiatry Lab at the Hebrew University in 2012, the Neuropsychiatry Clinic at Hadassah Medical Center in 2013, and the Brain Health (Neurocognitive) Clinic at Hadassah Medical Center in 2020. He is currently an Associate Professor of Neurobiology at the Faculty of Medicine, Hebrew University of Jerusalem; Senior Neurologist and Associate Professor of Neurology, Hadassah Medical Center; Director of the Computational Neuropsychiatry Lab at the Hebrew University; and Head of Cognitive Neurology at the Hadassah Medical Center. His research established the importance of spatial, temporal, and social cognition in Alzheimer's disease by identifying the responsible brain system, its deviation along the AD-continuum, as well as a most interesting phenomenon of inter-relations between this system and a memory system. He

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also developed "Clara" (www.claramind.com) a human-like artificial intelligence (AI) system for early diagnosis of preclinical Alzheimer's disease.

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Marco Blom

Marco Blom (1961) is scientific director of Alzheimer Nederland (Alzheimer's Society in the Netherlands). He is psycho-gerontologist and since 1987 involved in organisations and projects on dementia. He started his career at a Community Mental Health Centre in The Hague and was in 1991 appointed at the National Institute of Care and Welfare (now called Vilans) in Utrecht. In March 1997 he joined Alzheimer Nederland. He was involved in the development of the Alzheimer Cafes, the academic Alzheimer Research Centres and the online platform (www. dementie.nl) for people with dementia and their family caregivers. Other affiliations: board member of the Delta Plan Dementia, the national program on dementia in the Netherland (2013 – 2020), member of the editorial board of the Netherlands Journal of Psychogeriatrics (called Denkbeeld) and board member of Alzheimer Europe (since 2018).

Prof. dr. Wijnand IJsselsteijn

Prof.dr. Wijnand IJsselsteijn has a background in artificial intelligence and cognitive neuropsychology. Since 2012, he is full professor of Cognition and Affect in Human-Technology Interaction at TU/e. He has an active research program on the impact of technology on human psychology, and the use of psychology to improve technology design. His work is focused on enhancing human learning, communication, health and wellbeing, and improving quality of life for people living with dementia. His work is being supported by a.o. Alzheimer Nederland. As co-PI, he was recently awarded the prestigious NWO Gravitation grant on the topic of Ethics of Socially Disruptive Technologies (www.esdit.nl). Wijnand is scientific board member of the Eindhoven AI Systems Institute (EAISI; www.eaisi.nl). He directs the interdisciplinary TU/e Center for Humans and Technology, and he co-directs the Expertise Center for Dementia and Technology at TU/e (www.ecdt.nl). He has published over 250 academic papers, and his work is widely cited (current h-index of 66) and applied in academic as well as industry contexts. His most recent co-edited book "Making Design Work: Engaging with Dementia in Context" appeared in 2019 (with Rens Brankaert).

Marieke Monroy-Winter

Marieke Monroy serves as Deputy Head of Mission in Israel since August 15, 2020. Before that she was Head of Security and Defense Policy in the Dutch Ministry of Foreign Affairs, mainly focusing on NATO, EU Common Security and Defense Policy, OSCE and security issues such as maritime security and hybrid threats. She held several other positions in the field of Security Policy both at the Dutch Ministry of Foreign Affairs and the Permanent Representation to NATO. Previously, she was Deputy Head of Mission in Lisbon and also held diplomatic positions in Slovakia and Indonesia. Marieke Monroy has a degree in Business Administration and a degree in Roman Languages and Cultures from the University of Groningen.

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Dr. Henk Herman Nap

Mr. Henk Herman Nap, PhD, MSc is an expert on eHealth at Vilans, a member of the board at the International Society of Gerontechnology (ISG) and has a visiting research position at the Human-Technology Interaction group at Eindhoven University of Technology (TU/e). Vilans is the leading expertise centre on long-term care in The Netherlands. Henk Herman has a background in cognitive ergonomics, with a MSc degree in Psychology (Utrecht University), a PhD in a Gerontechnology related theme, and a Postdoc in senior gamers from the TU/e. Henk Herman worked at the TU/e and Smart Homes in multiple EU development projects on eHealth, seniors, and gaming, fall prevention & detection, interoperability, and integrated care. In addition, he coordinated 4 Dutch IPC projects for approx. 70 SMEs in the field of domotics & smart living, coordinated several Dutch implementation and research projects on eHealth, and coordinated the EU STOPandGO project (H2020). Currently, Henk Herman works as a project coordinator and senior researcher in innovation & research, specifically in the field of eHealth and long-term care policies. At Vilans, Henk Herman is coordinator of the International HAAL Active and Assisted Living (AAL) project on an AAL bundle that supports people with dementia and their (in)formal carers during their client journey, the GUARDIAN (AAL) research project on social robotics for people with dementia and (in)formal carers, the eWare AAL project on lifestyle monitoring and social robotics for people with dementia and their (in) formal carers, the MagicTABLE project (ToverTafel) and worked/s in other AAL projects such as Palette and FreeWalker as a workpackage manager of co-design and user evaluation. Furthermore, i-evAAlution, Certification-D and POSTHCARD are also AAL projects he supports in co-creation and research. Henk Herman is the WP3 leader of the H2020 ME-WE project on young carers. In the WP, a European Delphi study is performed in 6 countries and a systematic literature study. Henk Herman leads the research on the evaluation of the long-term care act in The Netherlands for the Ministry of Health. Besides these projects, Henk Herman is project leader of multiple eHealth implementation and evaluation projects in The Netherlands, such as 'Anders Werken' in the province of Noord-Brabant. In addition, Henk Herman is supervisor of several MSc and PhD students and is involved in Human In Technology courses at the TU/e.

Prof. David Tanne, Director, Stroke and Cognition Institute, Rambam Medical Center, Haifa, Israel

Prof. David Tanne serves as the president of the Israel Neurological Association. He is a Professor of Neurology and directs the Stroke and Cognition Institute at the Rambam Health Care Campus. A graduate of the Sackler Faculty of Medicine (Magna cum laude), He has completed his fellowship in stroke and cerebrovascular diseases during 1996-1998 at the Henry Ford Hospital and Health Sciences Center, Detroit Campus of Case Western University, Detroit, USA. Prof. Tanne has directed the Stroke Center at the Sheba Medical Center and served at the Sackler Faculty of Medicine, Tel Aviv University and staff of the interdisciplinary

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Sagol School of Neuroscience and the Herczeg Institute on Aging. He has initiated reperfusion therapy for acute ischemic stroke in Israel, established a dedicated stroke unit, a neurovascular ultrasound lab and stroke prevention clinics. Prof. Tanne is a principal Investigator of the National Acute Stroke Israeli Registry (NASIS) Project, the chair of the advisory committee for the Israeli Stroke Register, Israeli Ministry of Health, and Member of National Council of Heart and Vascular Disease, the Israeli National Health Councils. Prof. Tanne has published over 250 scientific peer reviewed publications, serves on the editorial board of the journal Stroke and his major areas of interest are stroke, vascular cognitive impairment, dementia and Alzheimer disease, novel technologies, and brain health.

Fokko van der Woude

Fokko van der Woude is an entrepreneur and co-founder of Tolooba. He works on the mission to enable people to use their memory for as long as possible. His focus is on finding the product market fit for new products and services, with a user-centered design. In 2013 he developed a solution that prevented people suffering dementia from leaving the house. By disguising doors as bookcases with a doorsticker he developed a user-friendly solution that decreased the numbers of people running away with over 80%. He specializes in creating effective and user centred solutions and currently works on a novel way of cognitive training that already showed 88% customer satisfaction. Last year his company won the JAIN challenge for best prototype with Tolooba RMBR. An AI based solution for giving back memories to people suffering dementia. Enabling people to reconnect with their loved ones.

Biosketches organizers

Hans Arnold

Since 1994 independent entrepreneur with experience in the field of board decision making, investment management, new business development, international market expansion, knowledge management and ICT. For his relationships by combining different insight of science, processes, and technologies he develops with stakeholder's new business opportunities, validated business models and program-plans. He assists science institutes and companies based on the CSR principle. He is used to work with large and complex organizations, where projects can only be realized by executing dialogue, flexibility and goals projects, capabilities to succeed, coach, delegate and negotiate. He is most confident in environments where international projects with multidisciplinary teams must be realized. Typical complex factors he has supervised and successfully mastered are: working with government organizations and the associated political and administrative matters; external environment factors such as different stakeholders and end users, each with its own culture, design and business cases; wishes, budget holders, clients, customers; the interaction between the project from the management, legal regulations, purchasers and the technical manager; composition of consortium partners and the collaboration, universities, scientific institutes, large and SME companies.

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Dr. Racheli Kreisberg

Dr. Racheli Kreisberg serves since January 2016 as the Innovation Attaché of the Netherlands Innovation Network, Ministry of Economic Affairs and Climat Policy, at the Netherlands Embassy in Israel. She is responsible for developing R&D and business collaborations between Dutch and Israeli companies, universities and research institutions. Her work is addresses and implments the innovation of the Netherlands (i.e., Dutch societal challenges, mission driven innovation policy, Key Emerging Technologies) as well as the UN societal development goals (SDGs). Prior to this position she managed her own consultancy company that specialized in the initiation and management of collaborative EU research projects (i.e., Horizon2020) and she serves as an evaluator of the European Commission. Dr. Kreisberg was the Head of the Bioinformatics Unit of Tel Aviv University between 1998-2005. She holds a PhD in Biotechnology and Molecular Microbiology from Tel Aviv University (TAU), an Executive MBA from TAU, an MSc in Chemistry (summa cum laude) from the Technion Israel Institute of Technology, and a B.Sc in biology from the Hebrew University in Jerusalem. Racheli was born in the Netherlands and immigrated with her family to Israel.

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