

Mental Health and AI

The role of artificial intelligence (AI) in maintaining mental health
Wednesday, Nov. 27, 2024.

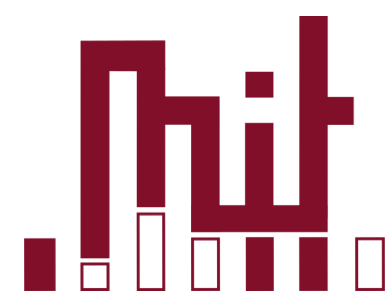
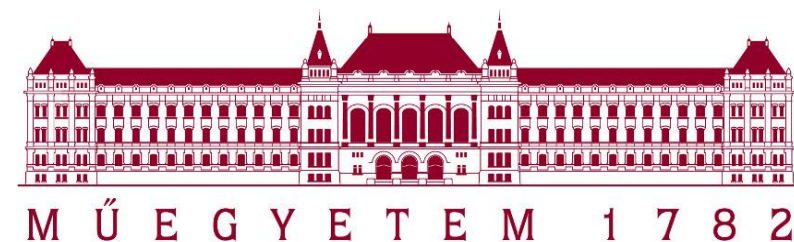
Workshop topics:

- AI supported psychiatry
- Digital solutions in elderly care
- Legal and ethical aspects of AI
- Human-centred AI in education

Organizing team:

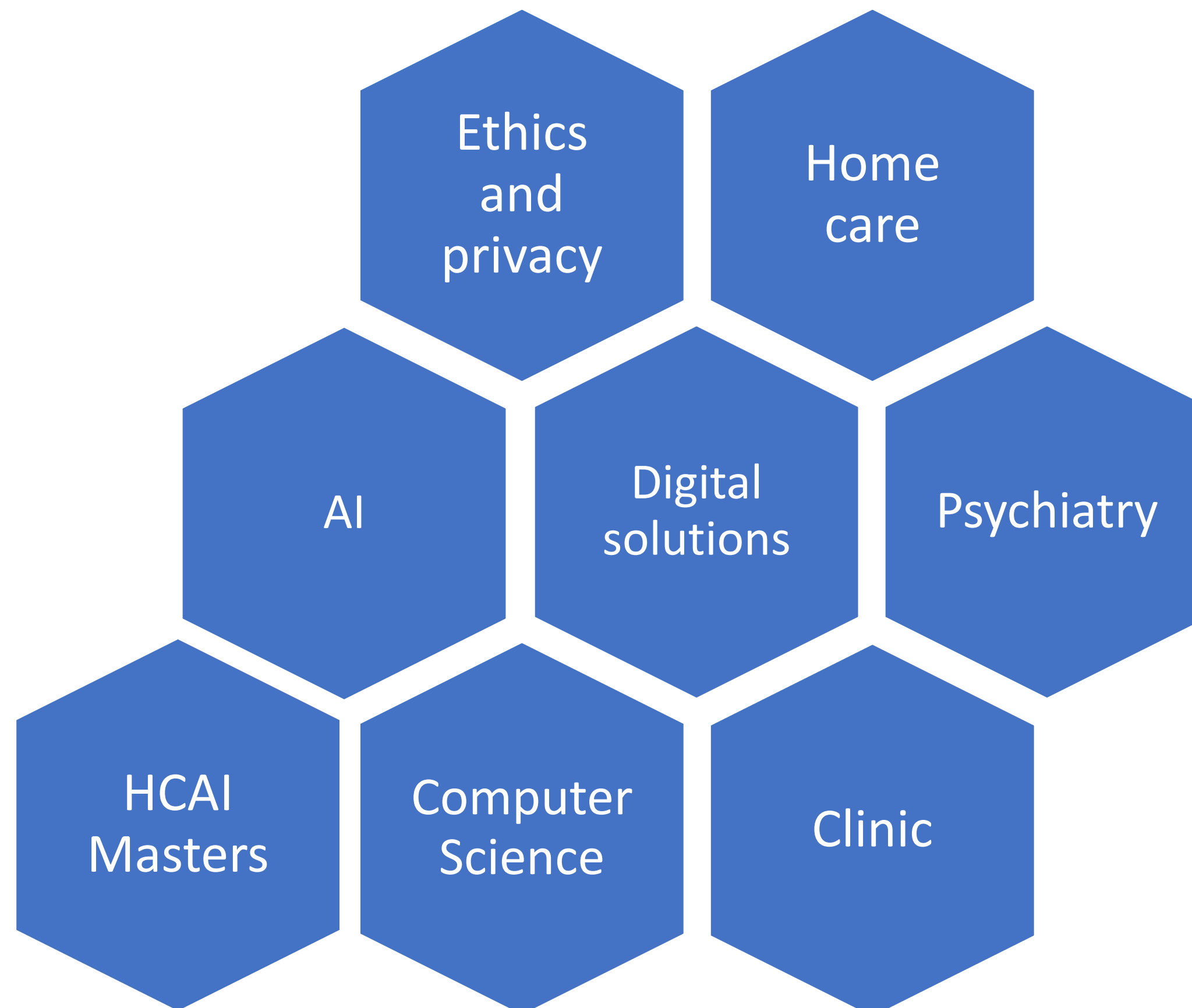
- Dr. Péter Hanák
- Dr. Gábor Hullám
- Dr. Ákos Szőke
- Dr. György Strausz

Partners:



Human-centred AI and mental wellness

A multidisciplinary domain



Human-centred AI factors

Technology not only factor in success of AI

- Technology has advanced rapidly last few years
- AI starting to move from Labs to Society
- The 'big questions' no longer (only) about technology...

Social and legal more and more important

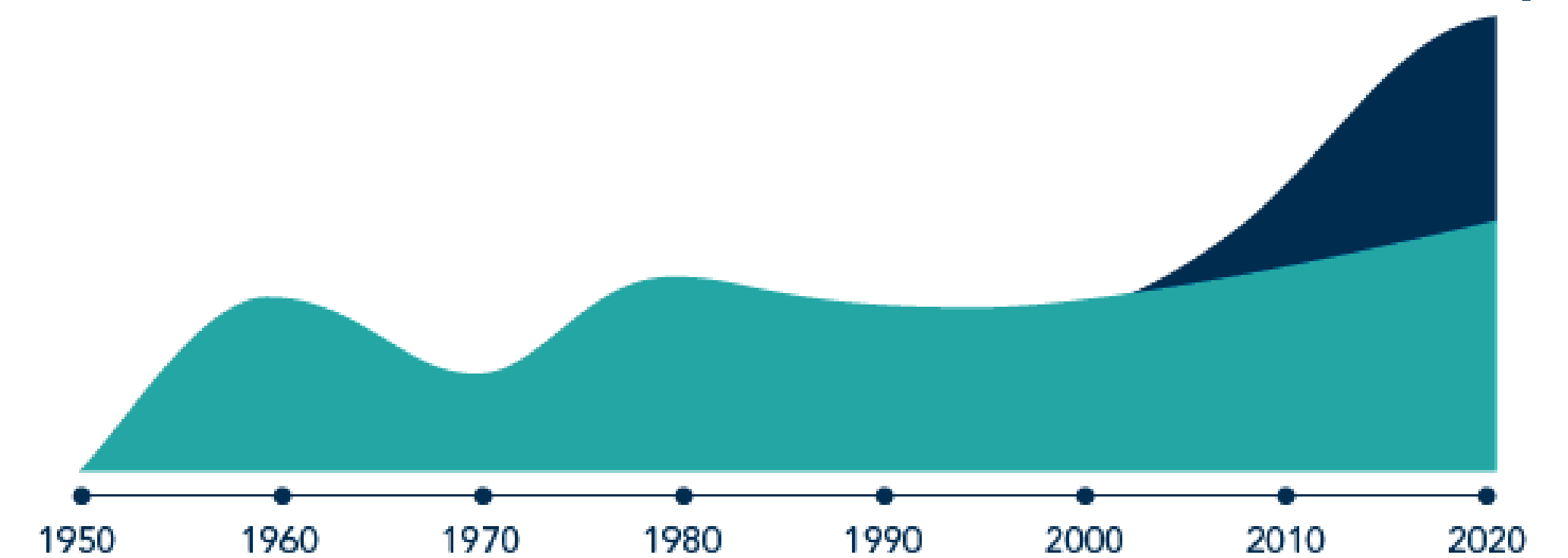
- EU (and others) are recognizing AI as 'transformational technology'
 - Comparable to the invention of steam power, electricity, and the digital computer
 - Lasting impact on society
- Regulation required to get it right

Design factors

- Plenty of ethics
- Attention on application & deployment of AI
- Integration of ethics with technology
- Research-driven

AI in Labs

AI in Society



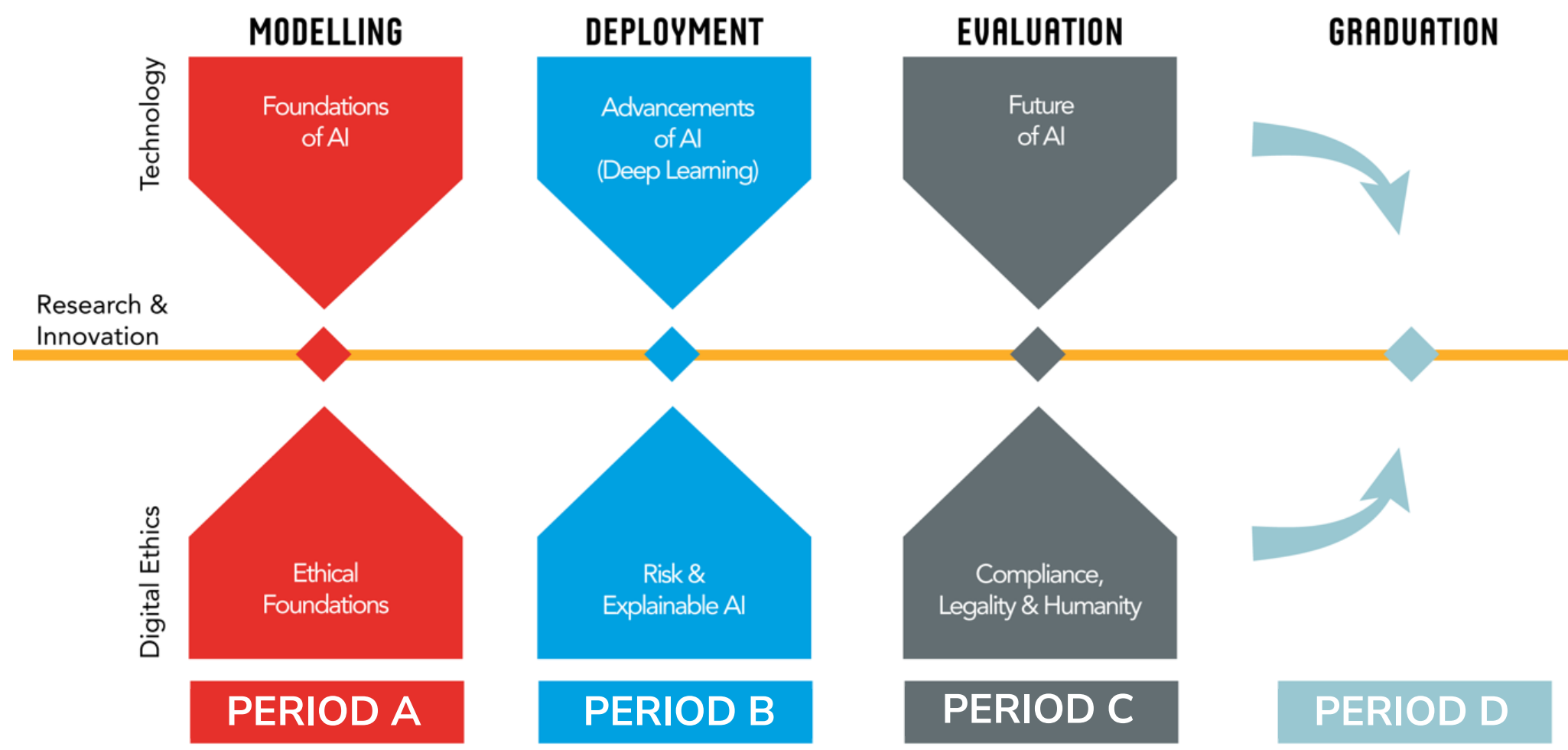
Source: NL Scientific Council for Government Policy, "Opgave AI", 11-11-2021

The screenshot shows the European Commission's website. At the top, there is a search bar and the text 'Shaping Europe's digital future'. Below this is a navigation menu with links for Home, Policies, News, Library, Funding, Calendar, and Consultations. The main content area is titled 'Regulatory framework proposal on Artificial Intelligence' and includes a sub-header 'The Commission is proposing the first ever legal framework on AI, which addresses the risks of AI and positions Europe to play a leading role globally.' A small copyright notice for 'gorodenkoff - iStock Getty Images Plus' is visible in the bottom right corner of the content area.

HCAIM Curriculum

Follows MLOps lifecycle

Modelling – data exploration, model building, ...
 Deployment – integration with legacy, streams, ...
 Evaluation – model drift, improvements, ...



	Focus 1: Modelling Theme: Classic ML	Focus 2: Deployment Theme: Deep Learning	Focus 3: Evaluation Theme: Future AI	
	Period A	Period B	Period C	Period D
Technical Boks	Foundations of AI	Advanced AI / Deep Learning	Future AI / Learning	Master Thesis project
Practical Work	AI Modelling	AI in action Organisational AI	Socially Responsible AI	
Ethical Boks	Ethics Fundamentals	Risk & Explainable AI	Compliance, Legality & Humanity	

but with ethics included:

Modelling – needs analysis, bias detection and mitigation, ...
 Deployment – explainability, transparency, risk detection & mitigation, ...
 Evaluation – compliance, legal aspects, ethical auditing, ...

Master level skills as thread (research)

HCAIM Consortium



Subsidised by EU CEF European Platform for Digital Skills and Jobs,
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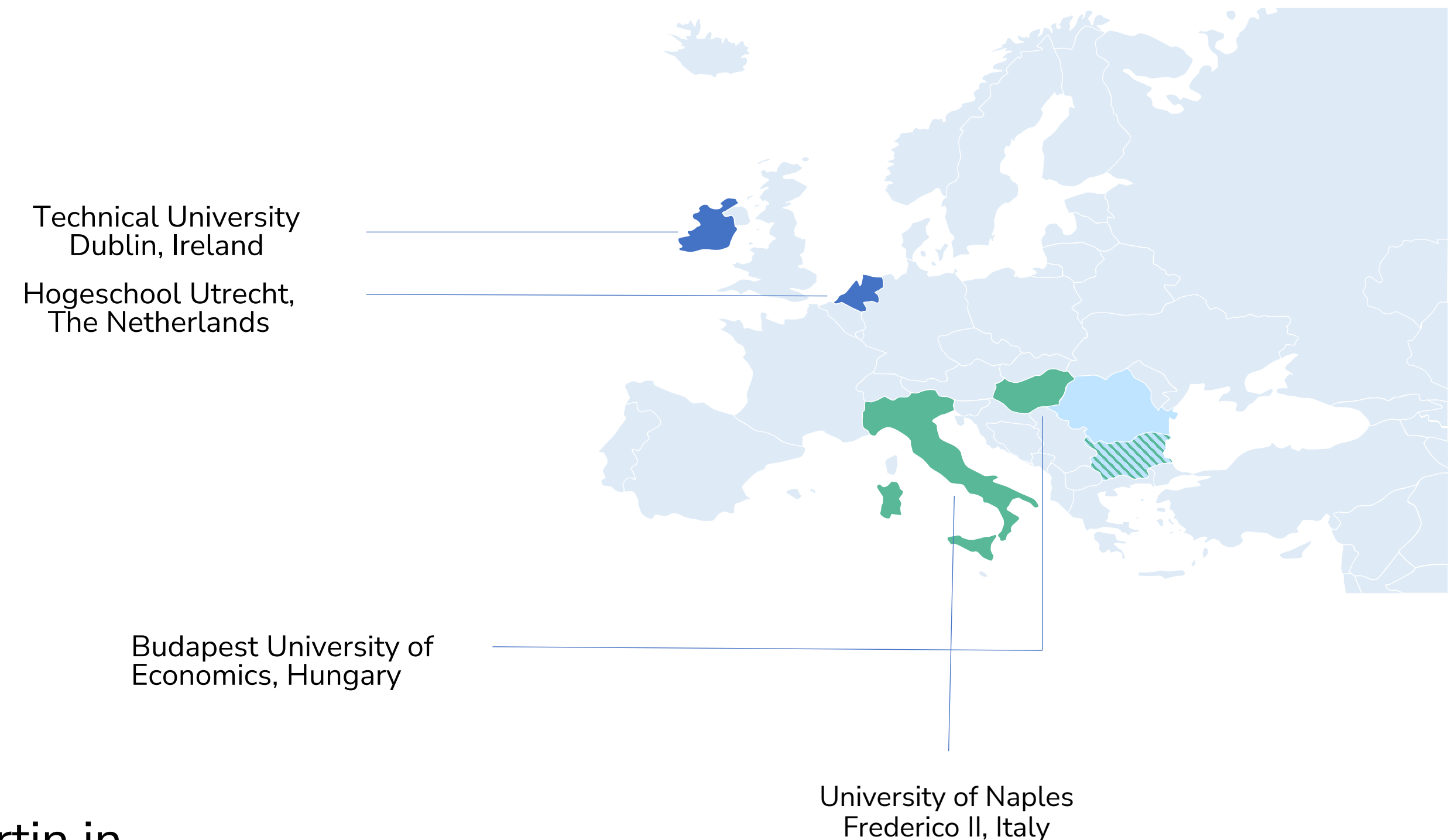
HCAIM is a cooperation between four universities

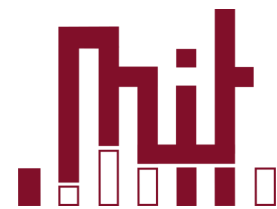
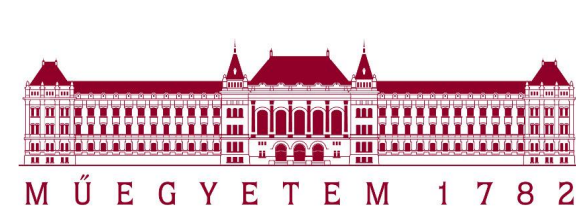
- Technical University Dublin, Ireland
- Hogeschool Utrecht, The Netherlands
- Budapest University of Economics, Hungary
- University of Naples Frederico II, Italy

HCAIM at BME

- 60 credits programme
- HCAI Diploma supplement
- 12-15 students graduating each year

- Will be integrated in AI Masters curriculum startin in 2025!





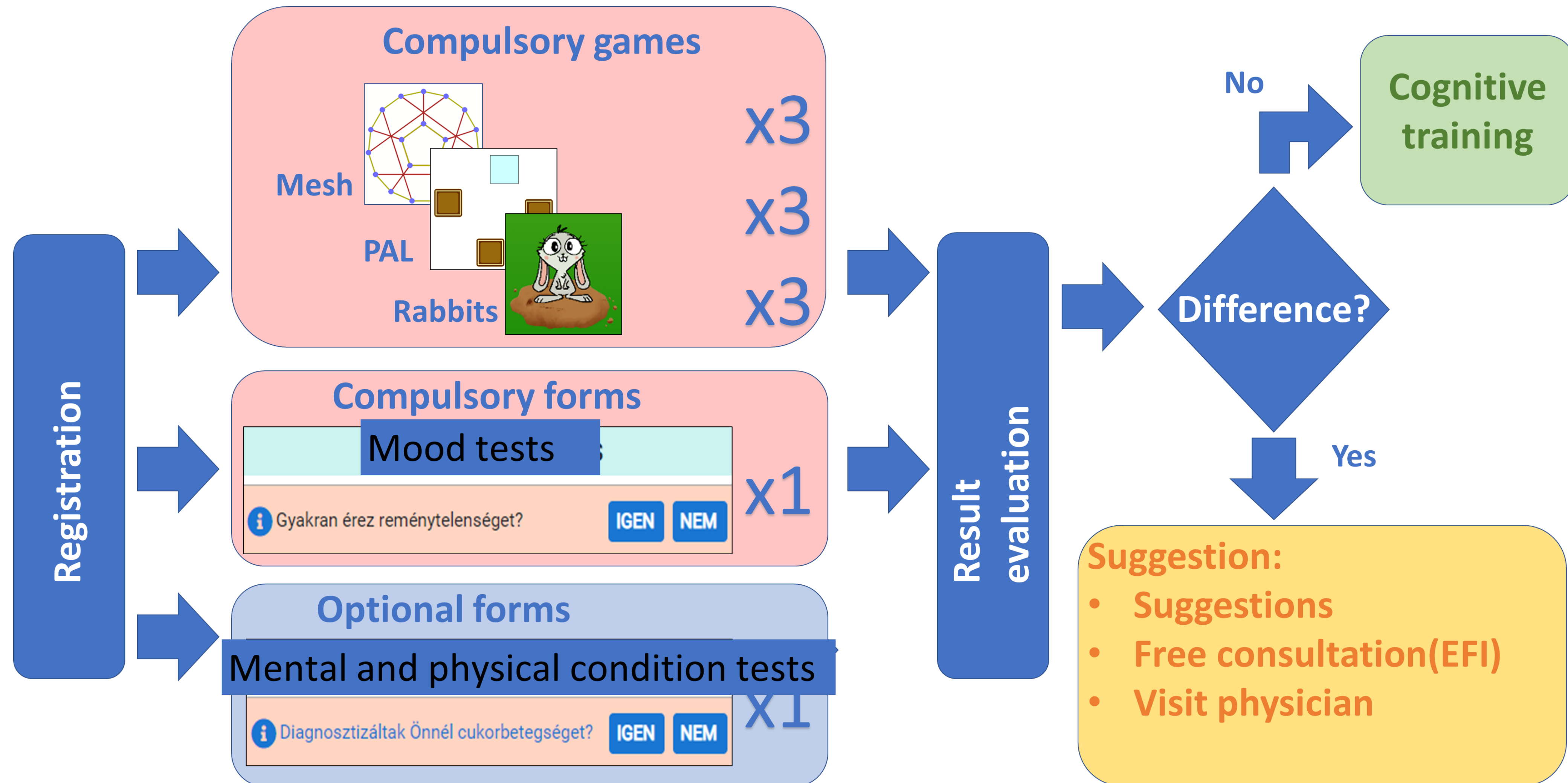
Human-centred AI and mental wellness

- integrated, internet-based service providing remote monitoring of physiological and psychological status
- physiological, psychological, and social status analysis for well-being
- active and healthy way of living will be motivated, supported, and deterioration will be detected
- physiological, psychological, and separation problems of the elderly caused by pandemics like covid-19 should be dealt with
- building virtual web-based community focusing on the need of elderly

All factors of HCAI is significant!

Mental Wellness in Elderly Care

Online memory/dementia screening process





MentalFitness Consortium

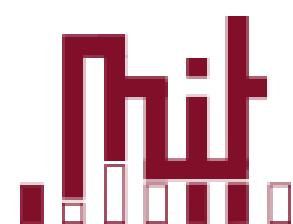
Multilogic Ltd. (foundation: 1986. 30+ people)

Software development and consultation



BME MIT department

Department of Artificial Intelligence
and Systems Engineering



Semmelweis University

Department of Psychiatry and
Psychotherapy



Major joint projects in consortia

- **FRONT-VL** Improving quality of life with services at home (2018-2019)
- **iCare4NextG** - Virtual community space to support quality of life for older people (2021-2022)
- **Bp. Hegyvidéki Önkormányzat** Memory screening (2023)
- **SymptoMind (SEPPK)** – Monitoring the condition of schizophrenic patients (2024)
- **Testnevelési Egyetem** Mental performance measurement (2024) IN PROGRESS
- **Velence Önkormányzat** Memory screening (2024) IN PROGRESS
- **II. kerületi Önkormányzat** Memory screening (2024) IN PROGRESS