Meet the teachers

During the Masterclass Artificial Intelligence in Healthcare, the lessons and discussions are provided by several guest lecturers from scientific, clinical and technological backgrounds. From startup and scale-up to hospital and business, we strive to represent all disciplines with our guest speakers, to provide a comprehensive overview.

Together with this team of guest lecturers, we will unravel the impact and use of machine learning and deep learning in a medical setting. We will discuss the challenges and opportunities of AI for the medical field. Lecturers at this edition of the Masterclass Artificial Intelligence in Healthcare include:

Wim Van Hecke is an academic engineer by training with two Master's degrees in applied biomedical engineering and neuroimaging and a Ph.D. in diffusion MRI analysis. He is the author or co-author of over 150 scientific publications and is the founder of Icometrix. Icometrix, a spin-off from the universities and university hospitals of Antwerp and Leuven, uses artificial intelligence to analyze brain scans. Icometrix raised 16 million euros in capital to ensure its further growth. Van Hecke and his colleague, Chief Technology Officer Dirk Smeets, share the entrepreneurial lessons of Icometrix, the clinical challenges and the potential that AI offers for medical imaging.

Nicky Hekster (Former Technical Leader Healthcare & Life Sciences IBM) was intensively involved with big data and artificial intelligence at IBM for many years. With a Ph.D. in mathematics, Hekster worked in the scientific domain of artificial intelligence before pursuing an international business career at IBM, becoming IBM Watson Ambassador. He provides insight into how and why big data will change healthcare and explains why computers are much smarter than people in certain areas of healthcare, but also why there is a lot of resistance and objections.

Magali Feys Feys (AContrario.Law) is a lawyer specializing in all aspects of intellectual property, information technology, data protection and data security law. In addition, Feys is a member of the e-Health legal working group of the cabinet of the Minister of Public Health. This working group advises the minister on the various legal aspects of digital care. She shares her knowledge in the field of legal and ethical preconditions for the use of artificial intelligence.

Georges De Feu (LynxCare) started his career as a pharmacist, before co-founding the company LynxCare. With their big data platform, LynxCare breaks through the silos in hospitals and healthcare institutions, makes data more transparent and provides structures to enable artificially intelligent IT applications. He is joined by Geert Van Gorp, CTO of LynxCare, for this session.

Joachim Schreurs and Matthieu Genicot work as data scientists at FibriCheck. FibriCheck is developing a smartphone application with an AI algorithm that analyzes whether the heart rhythm measurements taken by a user with a smartphone show abnormalities. They provide insight into the development, testing and training of machine learning models. How do you measure the effectiveness of an AI algorithm? And what is the difference between supervised, unsupervised and reinforcement learning?

Get a complete understanding of all AI related policy initiatives and public-private partnerships that may be relevant for your own organization. **Giovanni Briganti** is a physician and lecturer at the Faculté de Médecine, Université libre de Bruxelles. He and **Nathanaël Ackerman**, AI4Belgium's General Manager, are working together in this grassroots community, supported by the government. AI4Belgium has the ambition to position Belgium, including its regions, in the European and global AI landscape. This coalition brings together key AI players from the public sector, private sector and academia.

Registration

The tuition fee for the Masterclass Artificial Intelligence in Healthcare is €1,600 excl. VAT. This course fee includes two full days of education, all teaching materials, lunches, dinner and drinks. Hotel accommodation is not included nor mandatory. An overnight stay from Thursday to Friday, is possible. Participants can book directly at the hotel, for instance:
ibis Brussels Erasmus Hotel / Hotel Waer Waters Atelier 24 (B&B)

For the masterclass taking place on the 19th and 20th of May 2022, you can register via the website:
https://smarthealth.live/fr/masterclass-artificial-intelligence-in-healthcare/

The masterclass takes place at E-Health Valley. Address is Researchdreef 10 Allée de la Recherche 1070 Anderlecht (Brussels).

Information about the program can be obtained from program coordinator Frederieke Jacobs, who can be reached via the program secretariat masterclasses@smarthealth.live. Our organization follows all applicable regulations regarding Covid-19. You can rest assured that we will take appropriate measures to safeguard the health of our attendants and speakers.
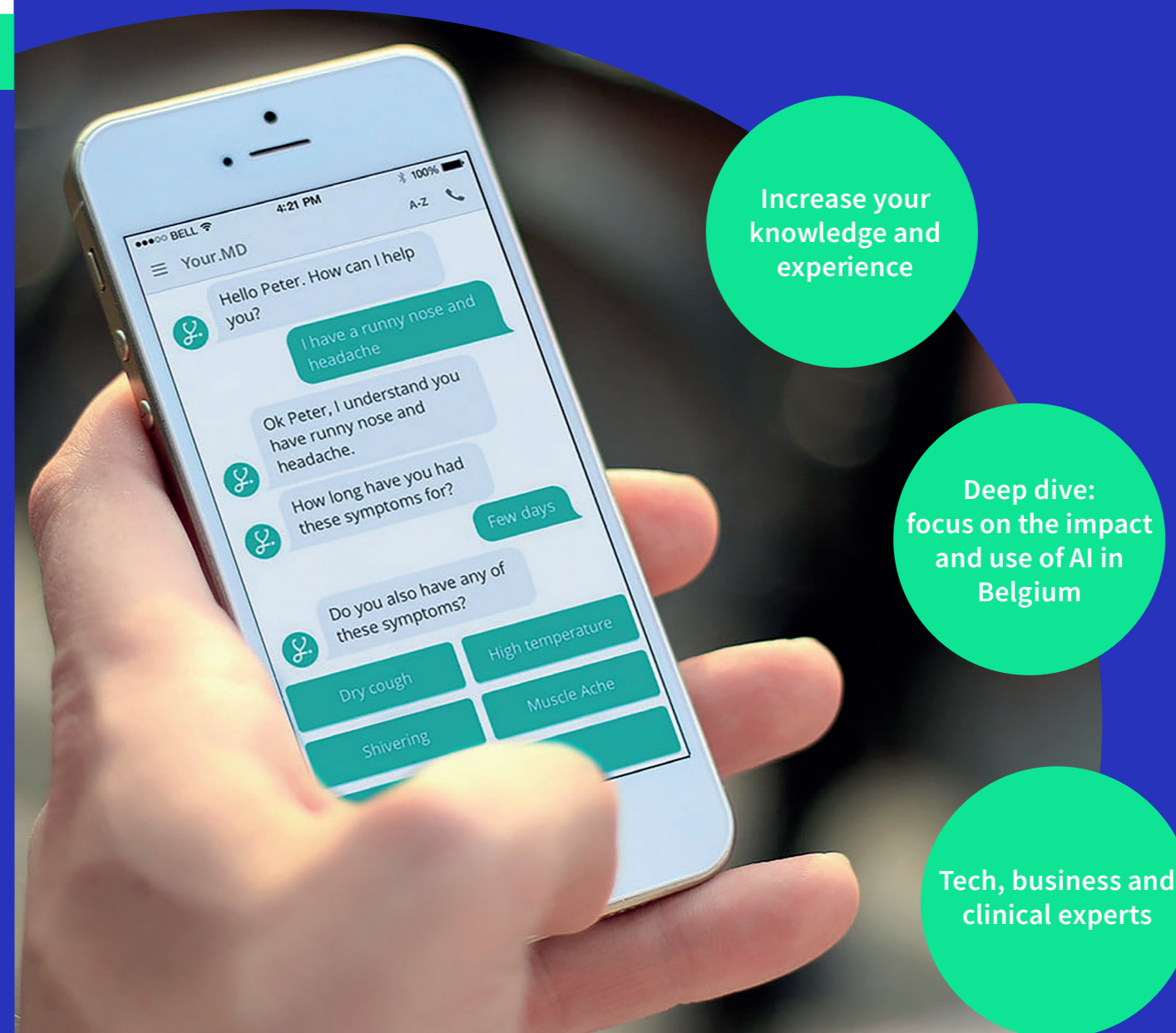
Accreditation (RIVIZ) for this masterclass is pending.

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♡ smarthealth

Masterclass
Artificial Intelligence in Healthcare

19th and 20th May 2022
a two day deep dive into the state of AI in Belgium's healthcare

Increase your knowledge and experience

Deep dive: focus on the impact and use of AI in Belgium

Tech, business and clinical experts

The potential of artificial intelligence, or AI, in healthcare is enormous. Software helps us make more accurate and faster diagnoses, recognizes an infection earlier, and may lead to better healthcare outcomes. At the same time, these AI technologies are in an early phase, and many AI applications for the healthcare sector are still limited in scope and effectiveness. But this landscape is changing almost by the month.

What is the state of AI in healthcare in Belgium? How do other healthcare organizations and hospitals use and deploy artificial intelligence? What are applications for specific medical fields, and what AI applications or tools can be beneficial for my organization?

This masterclass offers you a deep dive into the technological possibilities for your organization. In this two-day event, we look for answers to concrete questions, such as:

- What are the available clinical applications of AI? From medical imaging and radiology to speech recognition, clinical support systems, and workflow optimization software.
- What are implementation experiences in other hospital and healthcare organizations?
- Are my electronic health records and ICT systems suitable for AI?
- How do I collaborate with startups and scale-ups?
- What is the legal framework for AI applications in healthcare? What are the ethical and legal preconditions and how do you comply with the GDPR?
- How does the clinical validation of AI software work?
- How do we prevent a 'black box' scenario?
- How can I get started with (free) software and tools?
- Can I use a medical chatbot for customers and patients?
- What are regional, national, and international AI initiatives that I might join as a healthcare professional?

A deep dive into new technologies
Artificial intelligence is all around us: AI technology is present in our cars, smartphones, and in services like Netflix or Google Translate, which we use almost every day. Artificial intelligence touches on many scientific disciplines: computer science, psychology, philosophy, and linguistics. This masterclass places great emphasis on a specific area within the field of artificial intelligence, namely machine learning.

Machine learning revolves around the question: how do we create self-learning systems? How can you teach a machine – a computer or software program – to learn? Which technical, ethical, and legal questions do you face when using machine learning systems in the healthcare sector?

Due to major advancements in cloud computing, storage, processing power, and machine learning algorithms, several AI subdomains have taken off in recent years. This masterclass will update you on all the domains of AI that are used today. You will - amongst many other topics - learn more about:

- image recognition (such as AI software to detect stroke or traumatic brain injury)
- speech recognition (text to speech software, or automatic voice recognition)
- pattern recognition (such as ECG software to detect irregular heart rhythms)
- clinical support software (assisting physicians in decision making) and predictive analysis software
- natural language processing (such as applications for automatic transcriptions in EHR)
- different types of machine learning (supervised, unsupervised, and reinforcement learning) and methods (regression analysis, decision trees, etc.)

Target audience
This masterclass is intended for a broad audience. We have welcomed Chief Medical Officers, Chief Medical Information Officers, IT and Information Managers, Head of IT, as well as administrators, innovation managers, policymakers, data analysts, and insurers, along with physicians, general practitioners, and nurses. Participants come from both primary and secondary care, as well as local and (inter)national governments, insurance companies, MedTech companies, etc.

Location & program
The Masterclass Artificial intelligence in Healthcare takes place in E-Health Valley. The address is Allée de la Recherche / Researchdreef 10 1070 Anderlecht (Brussels). Included is a fine lunch on both days. On Thursday evening, we will end the day with networking opportunity during drinks. During a three course dinner, we welcome a guest speaker from the Artificial Intelligence Lab Brussels, a division of the Vrije Universiteit Brussel (VUB) leading fundamental and applied research in AI.

Thursday 19th of May
9.00 - start & introduction
9.30 - 17.30 - guest lectures & interactive sessions
18.00 - 20.00 - drinks & dinner

Friday 20th of May
9.00 - start
9.30 - 16.30 - guest lectures & interactive sessions
17.00 - end

Day 1: Thursday 19th of May

9.00 am - 9.30 am
Welcome and introduction

Block 1 - Introducing the domain of Artificial Intelligence
Nicky Hekster was intensively involved with big data and artificial intelligence at IBM for over 30 years, as IBM Watson Ambassador. With a Ph.D. in mathematics, Hekster worked in the scientific domain of artificial intelligence before pursuing an international business career. He outlines the rise of artificial intelligence in the 1950s up to the present and explains why we are currently experiencing the heyday of AI. Hekster's lecture provides insight into how and why AI will change healthcare, but also why there is a lot of resistance and objections.

Block 2 - Building blocks for AI
Before intelligent algorithms can work properly, many steps have to be taken: from data gathering and cleaning to interoperability and information exchange. LynxCare has developed a big data platform for healthcare organizations, bringing together all databases and data structures in the hospital in one place. From unstructured (80% of all medical data) to structured (20%) data, LynxCare combines data streams to apply machine learning in the medical domain. Pharmacist and LynxCare Co-founder Georges De Feu and Geert van Gorp (Chief Technology Officer) share their insights about the building blocks necessary for AI.

Block 3 - Deep learning and medical imaging
The domain of medical imaging - from dermatology to pathology and radiology - is experiencing the greatest change from artificially intelligent software, it seems. AI will fundamentally change the work of the radiologist and pathologist. Wim Van Hecke obtained his Ph.D. in medical imaging and is the founder of Icometrix, a spin-off from the university hospitals of Antwerp and Leuven. Van Hecke outlines the emergence of machine learning in medical imaging, the rise of deep learning and the application of AI software in a clinical setting. Icometrix CTO Dirk Smeets talks about the research and development of AI models for image recognition, clinical validation, and use in clinical practice.

18.00 - 20.00
We conclude this first day with drinks and dinner. A great way to share experiences, network and connect with like-minded innovators. For this evening program, we welcome a special **guest speaker from Artificial Intelligence Lab Brussels**, a division of the Vrije Universiteit Brussel (VUB) leading fundamental and applied research in AI.

Day 2: Friday 20th of May

9.00 am
Start

Block 1 - A legal framework for AI in healthcare
What are the legal preconditions for the use of AI? Magali Feys, founder of AContrario, specializes in all aspects of intellectual property, information technology and data protection law, with an intensive focus on AI and startups. Her practice also focuses on developing and setting out IP and innovation strategies for technology companies. In this session, she draws the legal framework for AI in healthcare.

Block 2 - Deep dive data science & AI
How does a machine learning model work? How do you train an algorithm? What is the difference between supervised and unsupervised learning? FibriCheck's data scientist Joachim Schreurs and Matthieu Genicot take us on a deep dive in AI technology. FibriCheck develops an application for patients to perform heart rhythm measurements at home. They show how FibriCheck develops decision support software and apps based on advanced Machine Learning and medical expertise.

Block 3 - AI landscape in Belgium
Get a complete understanding of all AI related policy initiatives and public-private partnerships that may be relevant for your own organization. Giovanni Briganti is a physician and lecturer at the Faculté de Médecine, Université libre de Bruxelles. He and Nathanaël Ackerman, AI4Belgium's General Manager, are working together in this grassroots community, supported by the government. AI4Belgium has the ambition to position Belgium, including its regions, in the European and global AI landscape. This coalition brings together key AI players from the public sector, private sector and academia.

16.30 - 17.00
Plenary closing session

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Evaluation - participant 2020 masterclass
"After following this Smarthealth masterclass, I have a better overview of what AI actually is. After two days I had a clear picture of where the hospital world now stands with AI and which applications might be beneficial for our organization. I have a better understanding of all aspects that are involved with AI in Healthcare, such as CE marking, privacy and (inter)national developments. A great deep dive into this topic!"