Bridging the Gap or CREATING DISTANCE IN THE PHYSICIAN-PATIENT RELATIONSHIP?

Anamaria Malešević

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BEFORE WE BEGIN, I'D LIKE TO GET TO KNOW YOU A LITTLE BETTER.

- **Your name and country**
- **Your job or professional role**
- **Previous experience with digital technologies in healthcare**

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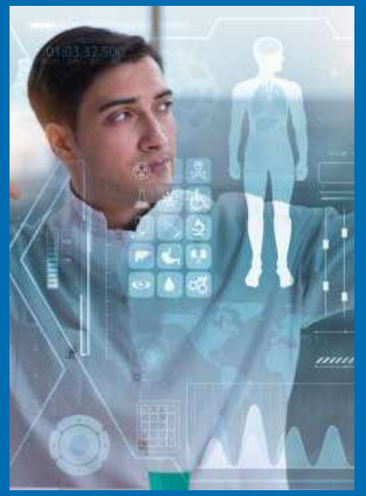
ABOUT THE DIGIT-HEAL

Research Topics:

- Explainability and transparency of AI
- AI and digital literacy
- Patient readiness and awareness regarding technology use
- Social implications of digital technology implementation
- Bioethical analysis
- Education of future healthcare professionals

- Research unit at the Catholic University of Croatia, dedicated to analyzing the ethical, social, and legal aspects of digital technologies (e.g., Big Data, Artificial Intelligence, etc.), with a focus on their application in healthcare and beyond.
- The Digit-HeaL laboratory brings together an interdisciplinary research group that contributes to constructive ethical reflection and social analysis of new phenomena arising from disruptive technologies.
- The primary goal of the research group is to promote responsible innovation, development, and implementation of digital technologies in healthcare through its activities.



DIGITAL HEALTH

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DIGITAL TRANSFORMATION OF SOCIETY

- Throughout history, industry has undergone a series of industrial revolutions.
- Industry 4.0 - technological advancements that have driven digitalization, integration, and the widespread adoption of the Internet and smart devices
- Information society - information can be created, utilized, shared, and integrated for economic, cultural, political, or other forms of benefit
- Those with access to digital environments have been able to significantly enrich their daily experiences
- Industry 5.0 - integrates physical and virtual spaces not only within the realm of manufacturing but across the social sphere.
- The ways in which we receive information, present ourselves, socialize, and fulfill various tasks and roles have all been reshaped

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(DIGITAL) TRANSFORMATION OF MEDICINE

- Medicine 1.0 focused on the treatment of disease
- Medicine 2.0 introduced technology and emphasized prevention
- Medicine 3.0 incorporated technology in a more systematic way
- Medicine 4.0 is fundamentally driven by technological innovation, particularly artificial intelligence
- Paradigmatic shift from curative approaches, treating diseases after they manifest towards preventive strategies aimed at averting illness altogether


REDICTIVE


REVENTIVE


ERSONALIZED


ARTICIPATORY

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DIGITAL HEALTH

- “the field of knowledge and practice associated with the development and use of digital technologies to improve health” (WHO, 2021:11).
- Some authors conclude that defining it is neither simple nor straightforward
- Association with related concepts such as e-health, telehealth, telemedicine, m-health…
- Transforming medicine into a more preventive discipline (Topol)
- 95 definitions of digital health commonly used in academic and professional literature (2020)

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DIGITAL HEALTH

- Mesko: it should not be seen as a standalone technological intervention within healthcare, but rather as a cultural transformation driven by social change and emerging needs
- Petersen: digital health is often viewed in an overly positive and optimistic light, while the social, economic, political, and personal implications are frequently overlooked
- Lupton: a broad range of technologies aimed at delivering healthcare, providing information to laypeople, and assisting in the sharing of their experiences with health and illness. It also supports training and education for healthcare professionals, encourages and engages individuals with chronic conditions in managing their own care, and empowers others to promote activities that improve health and prevent disease”

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COMMUNICATION TECHNOLOGY

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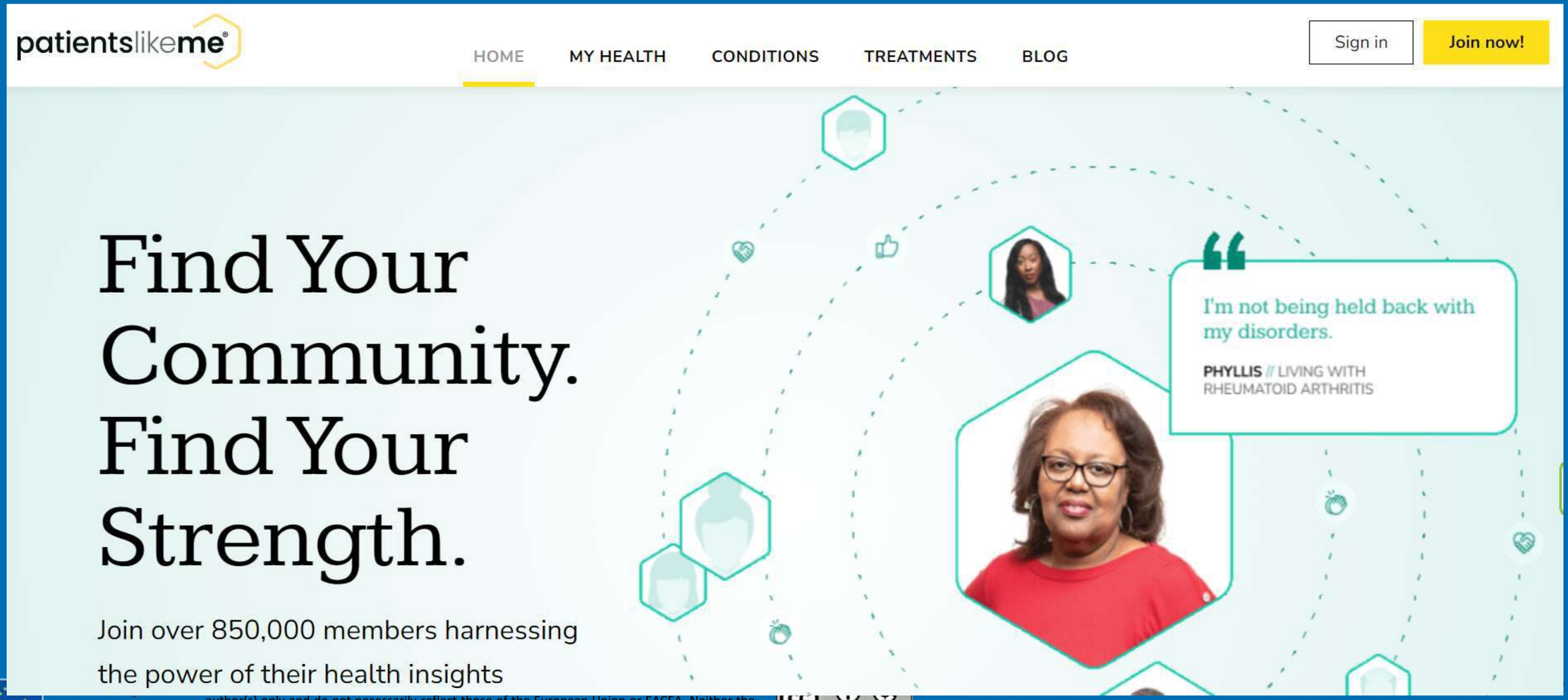
INTERNET SERVICES FOR INFORMATION AND EXPERIENCE EXCHANGE



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DIGITIZED DEVICES FOR REGULATING BODILY FUNCTIONS

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SELF-TRACKING DEVICES

EMERGENCY ALERT SYSTEMS

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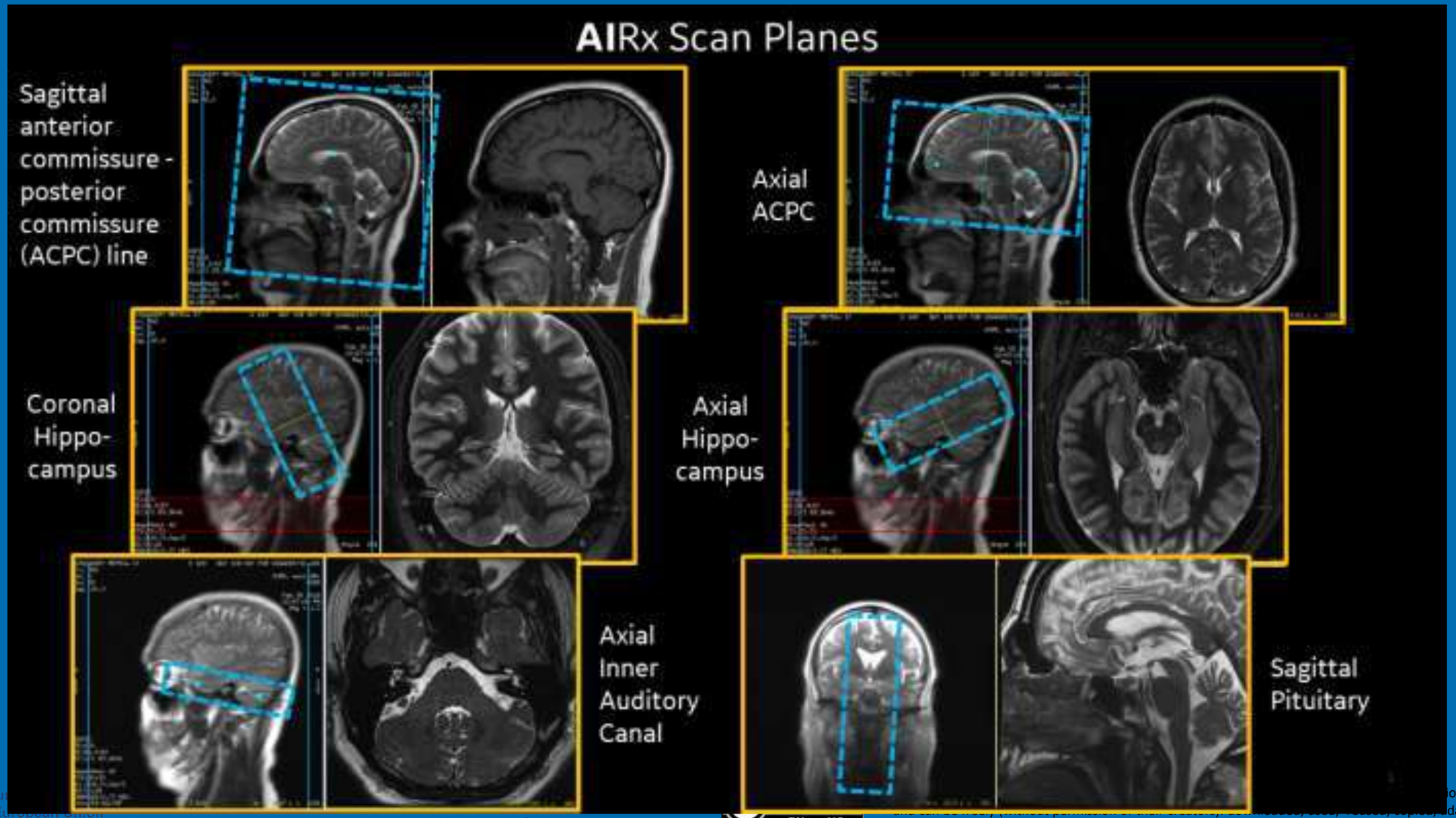
DIGITAL IMAGING SYSTEMS



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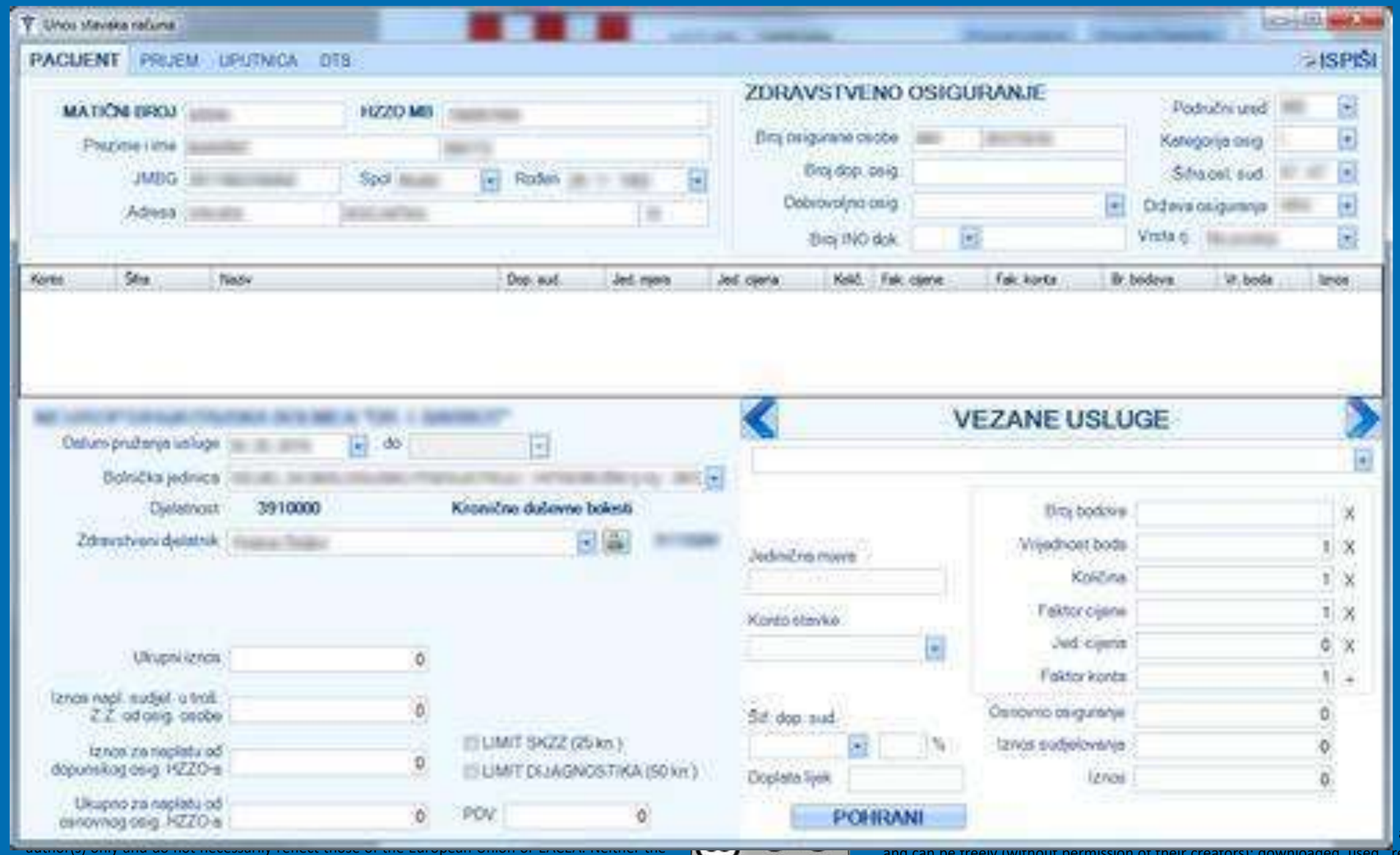
MEDICAL INFORMATICS



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DIGITAL DISEASE SURVEILLANCE SYSTEMS

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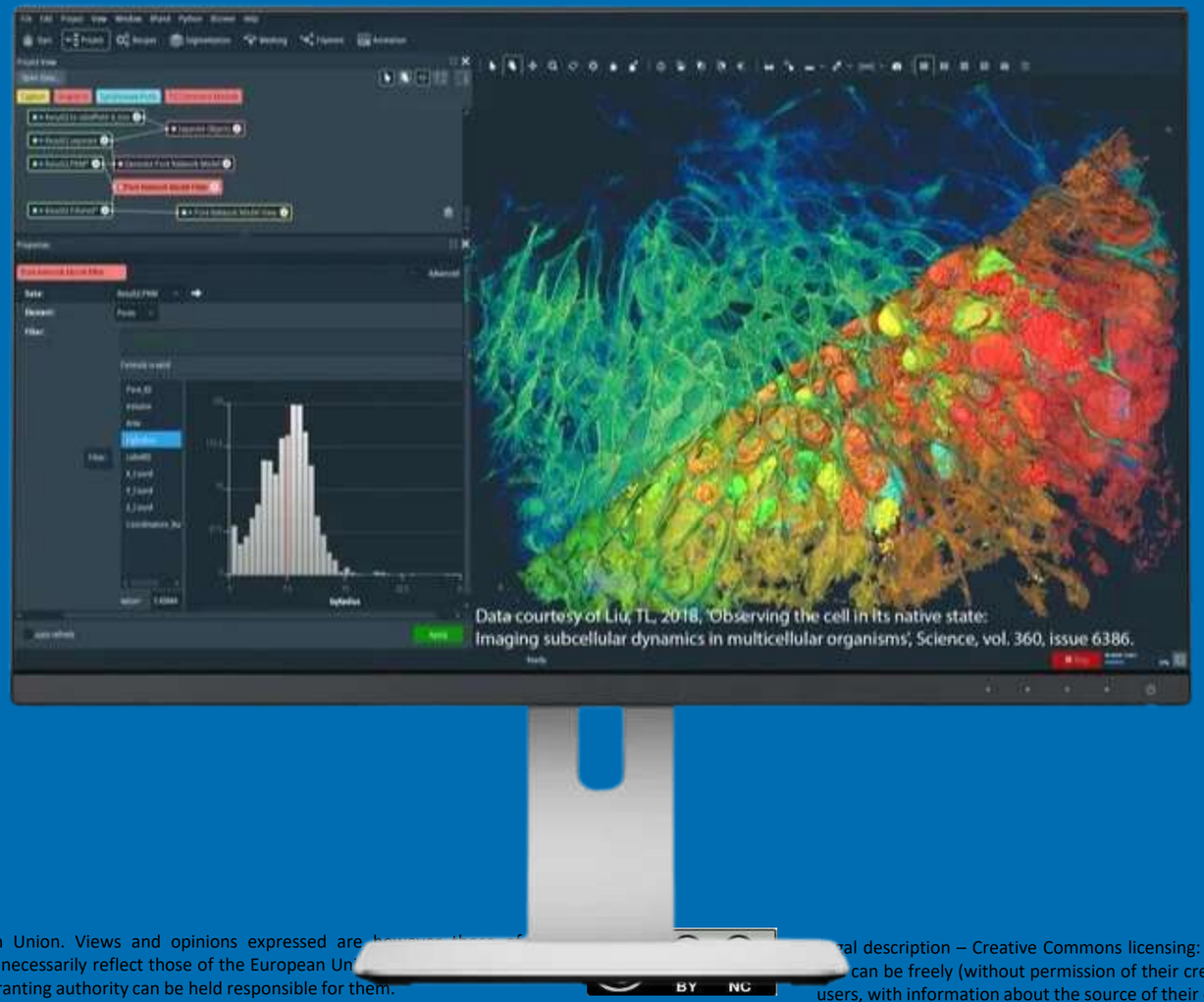
SOFTWARE FOR BIOMEDICAL RESEARCH



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gAMIFICATION, APPLICATIONS, AND VIRTUAL REALITY

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ROBOTICS

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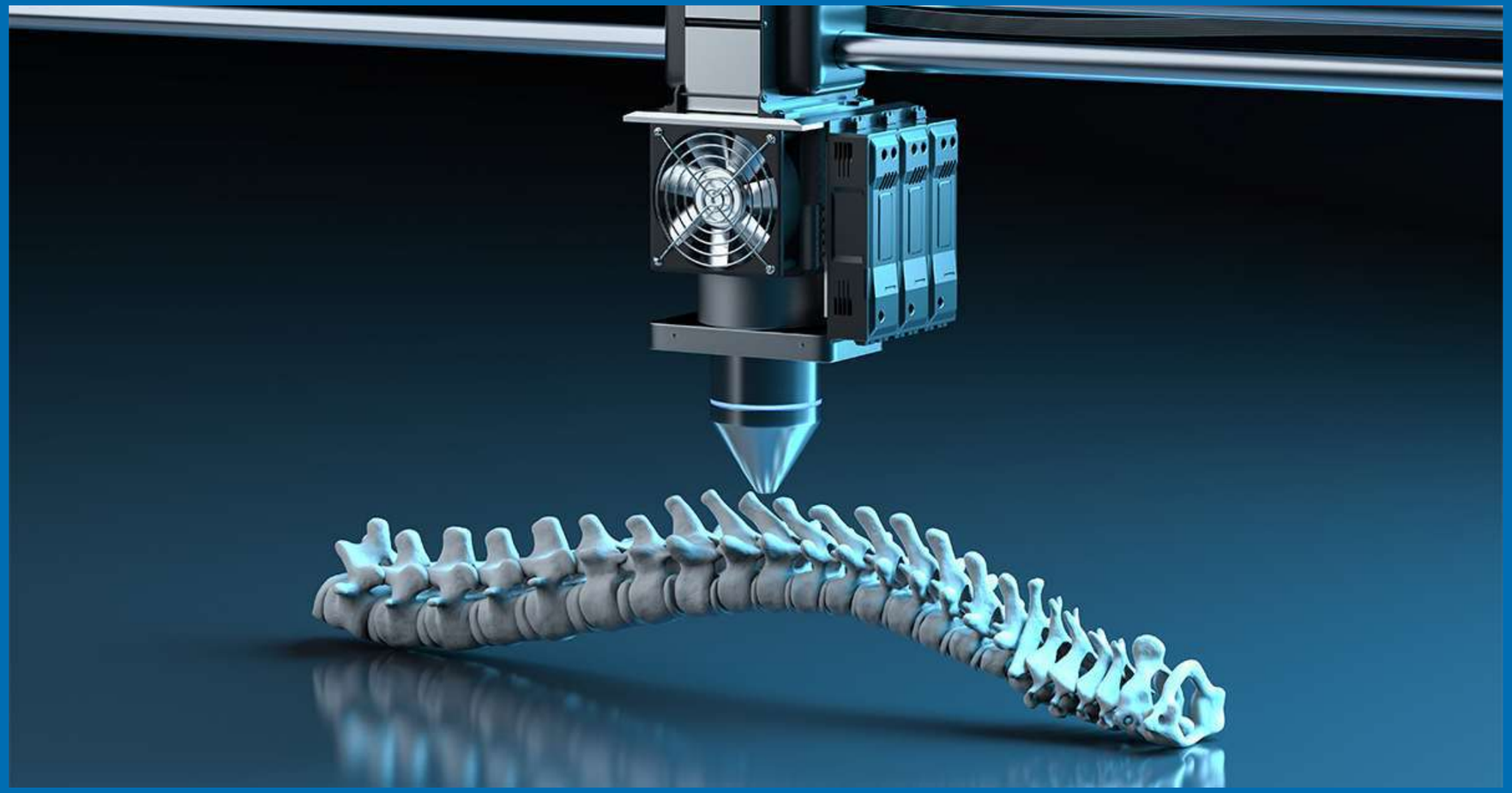
3D TECHNOLOGY



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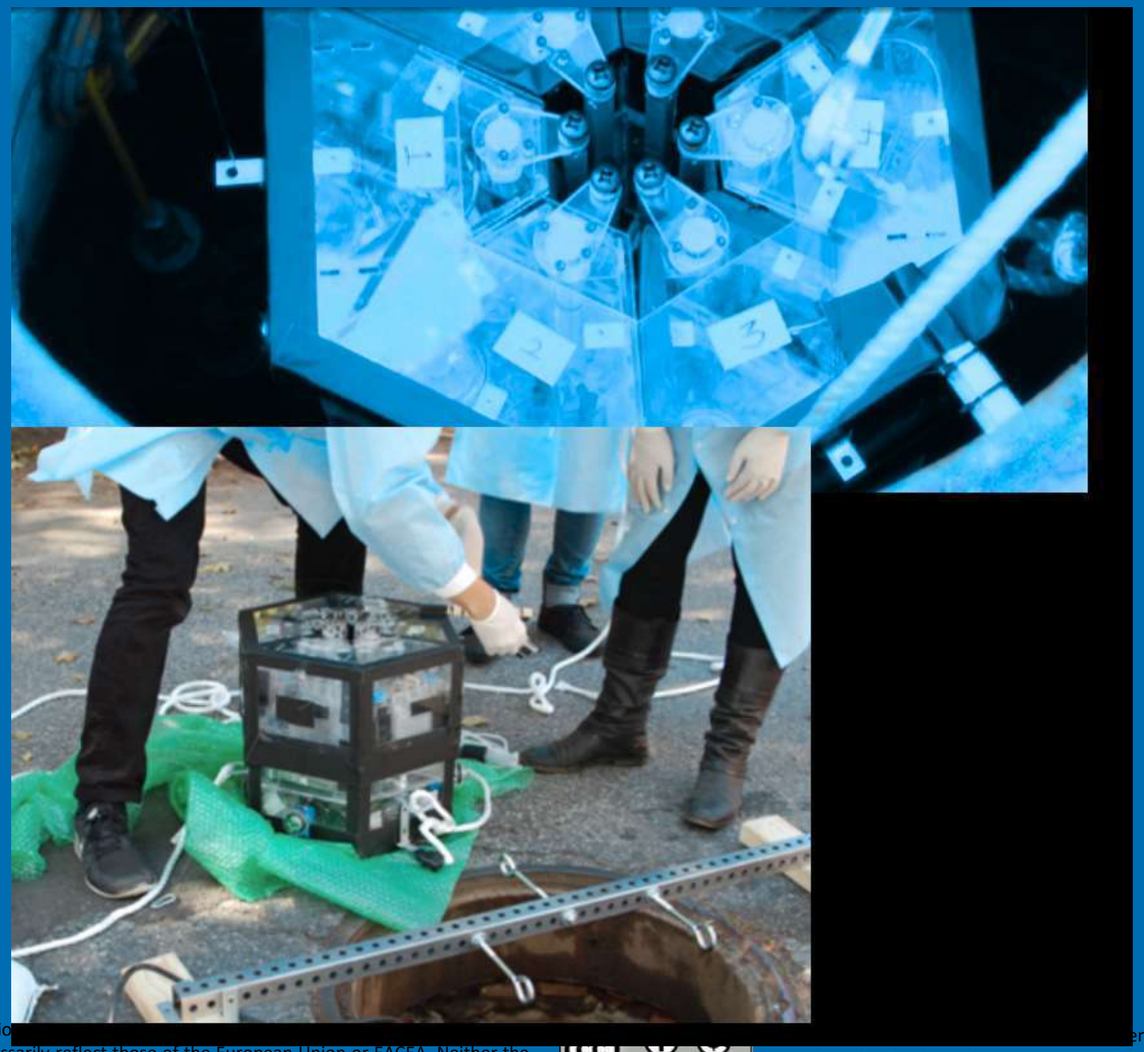
ENVIRONMENTAL MONITORING SENSORS



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EXPECTATIONS OF DIGITAL HEALTH

More Efficient and Accessible Healthcare

Reducing Healthcare Costs

The Empowered, Active Patient

Enhanced and Streamlined Work for Medical Professionals

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CHALLENGES OF DIGITAL HEALTH

- cybercrime, privacy concerns, physical (in)security, medical misinformation, and the exploitation of vulnerable individuals (Perakslis & Stanley, 2021)
- WannaCry cyberattack 2017
- lack of awareness among both users and manufacturers regarding these dangers
- ELSI—Ethical, Legal, and Social Issues.

ETHICAL

- Transparency
- Autonomy
- Informed Consent

SOCIAL

- technology overreliance
- lack of knowledge
- discrimination and bias
- digital divide

LEGAL

- Responsibility
- Data Protection and Data Governance
- Privacy

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PATIENT - PHYSICIAN RELATIONSHIP

- Implementing AI brings about changes that will impact the patient and physician relationship.
- The relationship between physicians and patients has been evolving under the influence of social circumstances and technological progress.
- The information and digital age have provided patients with tools empowering them to take on an active role as co-decision-makers, unlike when a paternalistic model prevailed and only physicians had exclusive access to medical information.

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GROUP TASK

Qualitative story completion technique

- You will work in three groups
- Each group will receive a short story beginning
- Your task is to complete the story by imagining what happens next

GROUP TASK

Think about:

- How does digital technology shape the doctor–patient relationship?
- Does it create more connection or more distance?
- What emotions, challenges, or opportunities appear in the story?

You have 20 minutes to discuss and complete your story. After that, each group will briefly share their version with everyone

RURAL CLINIC

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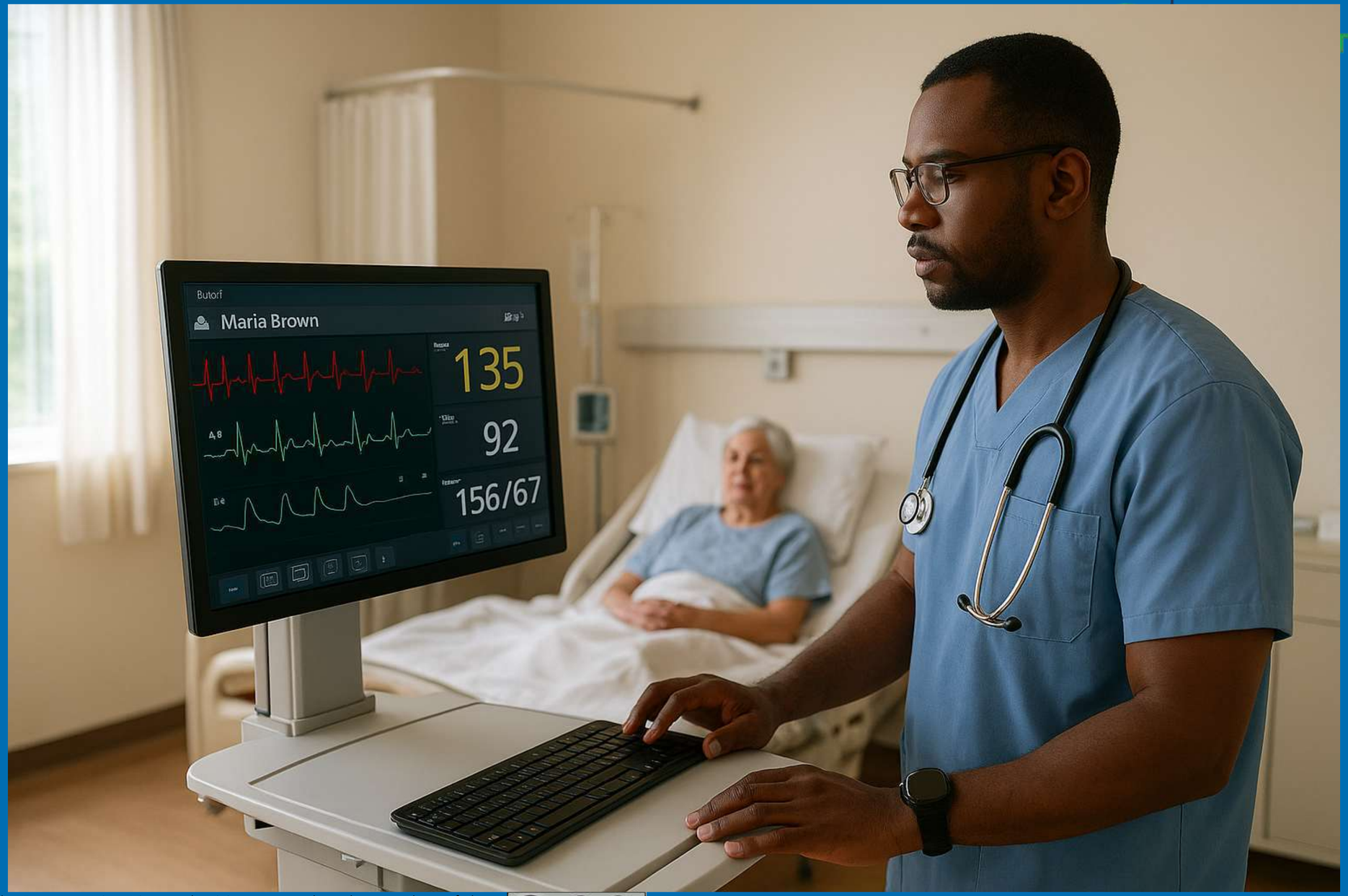
URBAN HOSPITAL



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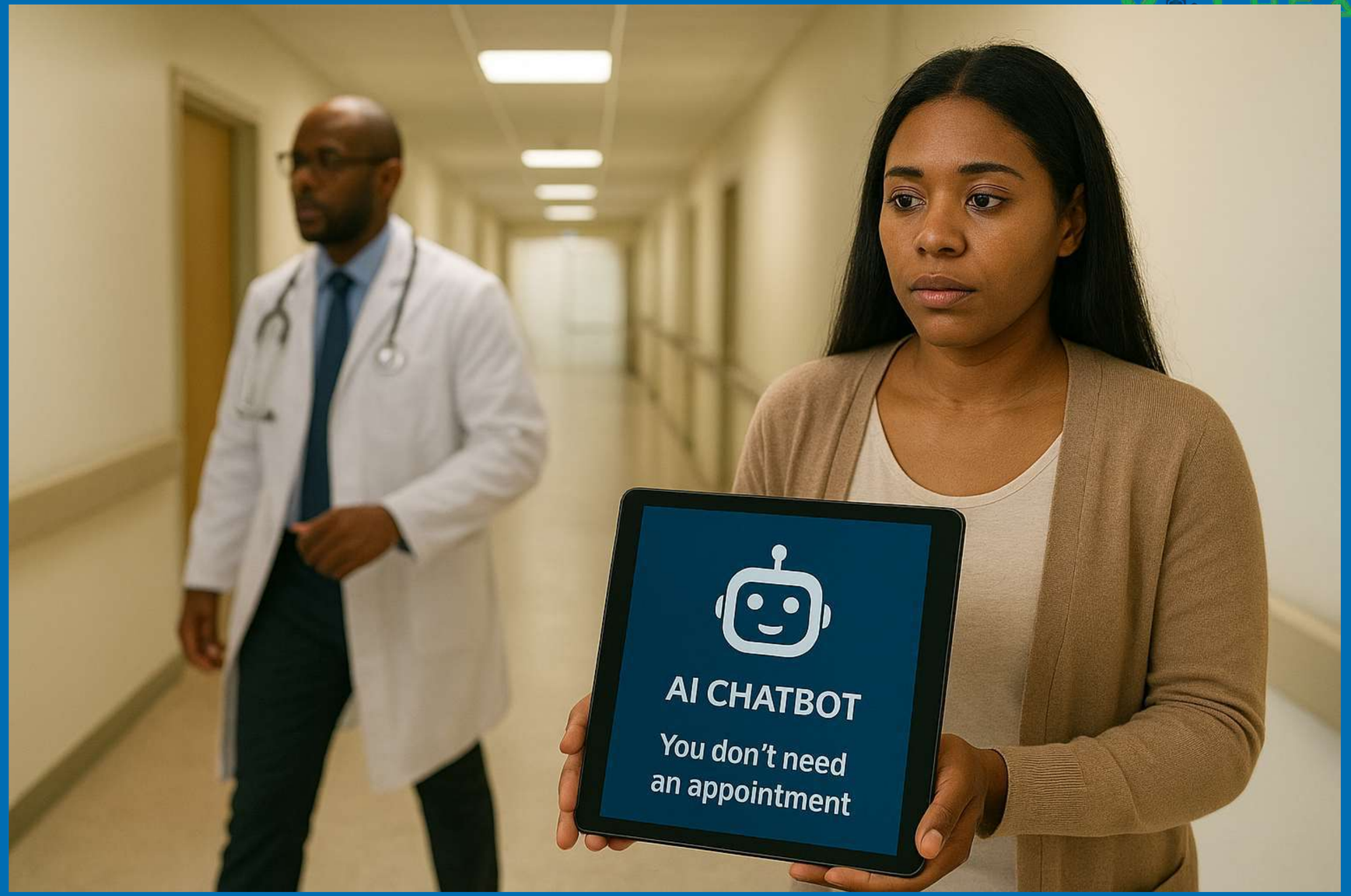
PRIVATE CLINIC



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RESEARCH

Digit-HeaL

Research on the expectations and challenges of using digital technologies (AI) in healthcare with key stakeholders in Croatia

Innovative use of future scenarios based on anticipatory ethics to encourage participants to reflect on technologies they have not yet encountered.

Research phases

Qualitative (2021) – Interviews with key stakeholders: physicians, patients, healthcare managers, jurists, engineers, and policy makers (n=75).

Quantitative (2022) – A survey conducted with medical students in Croatia and Slovakia (n=1715).

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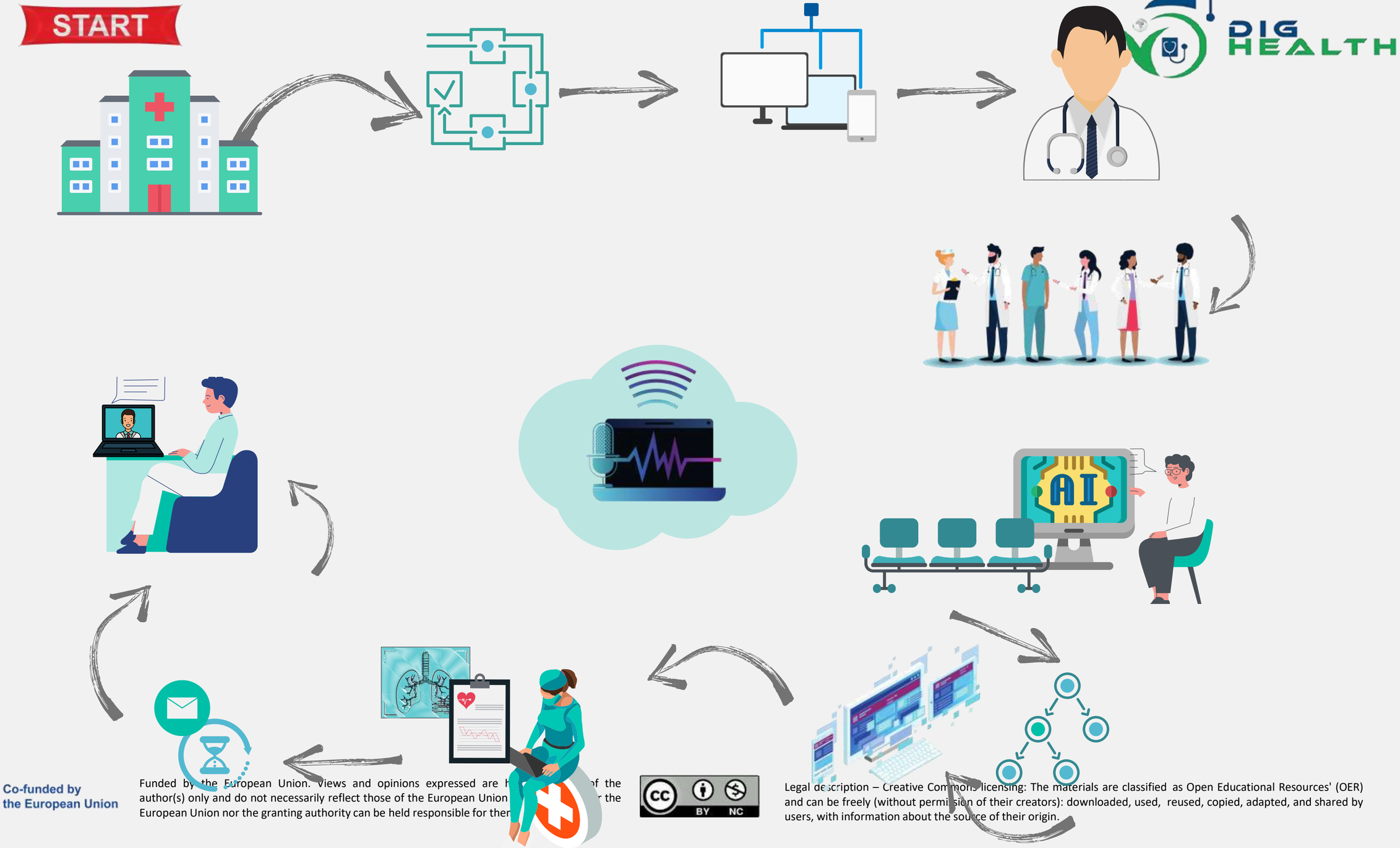

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PHYSICIAN - PATIENT RELATIONSHIP

KEY ASPECTS OF THE RELATIONSHIP

- Patients emphasize the importance of being listened to and actively involved in the shared decision-making process.
- Physicians highlighted the importance of honesty, openness, clear articulation of issues, and trust as essential elements in treatment.

CURRENT STATE

- Excessive workload for healthcare staff and limited time for each patient
- Administrative burden
- Focus on technology rather than the patient

EXPECTATIONS

- Reducing waiting lists
- Reducing administrative load for physicians
- Faster diagnostics

CHALLENGES

- Fear of losing human contact and reduced interaction
- Artificial intelligence seen by patients as a replacement for physicians (self-diagnosis)
- Loss of a holistic approach to care

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TRUST

- Trust is a crucial factor in the current model of the patient-physician relationship.
- As a complex concept from the perspective of both physicians and patients, trust is the foundation for successful health outcomes and a quality relationship between them.
- Trust is deeply embedded in the physician-patient relationship
- Inserting a new actor will bring disruption and potentially even the creation of new dyadic or triadic trusting relationships between physicians and AI, patients and AI, or even between patients, the physician, and AI

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TRUST

Many patients emphasised trust, honesty and effective interpersonal communication as a fundamental aspect of the patient–physician relationship.

I think the most important thing for me is that we communicate about everything. To talk. To trust what he tells me. (Patient 5)

Physicians also emphasised the importance of patients having trust in them, identifying openness and honesty as directly enabling the identification of the fastest and optimal treatment approach.

When they have trust in me, it becomes much easier for me to treat them. (Physician 3)

The most crucial aspect is establishing easy communication and trust in what we do. (Physician 12)

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PATIENT–PHYSICIAN RELATIONSHIP

- Some patients reported that they have developed a friendly relationship with their physician due to long-term treatment.

- Patients also expressed dissatisfaction that they sometimes do not receive enough care and attention from physicians.

I'd prefer if the physician didn't just look at the papers but lifted their head, talked to me, gave me a look, and conducted an examination if needed, which is equally important, because lately, it often seems to be reduced to just paperwork. (Patient 15)

Because, honestly, all that typing, printing, and confirming of test results and such, I waste a lot of time on it, and the actual examination of the patient and talking to them, I believe, should be retained, but in a way that avoids the need for me to look at the screen constantly. Personally, when I gather data, sometimes I forget that, while I'm typing and looking at the screen, I'm not really looking at the patient themselves, and I end up missing information I could gather just by observing them. (Physician 3)

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PATIENT-PHYSICIAN RELATIONSHIP

- Concern about the current state of healthcare: physicians are becoming too focused on technology, neglecting personal contact with patients.
- Young physicians are particularly at risk due to their limited experience with patient interaction.
- Worry that excessive reliance on technology may prevent young physicians from developing essential interpersonal skills.

> *For instance, when the electricity goes out, younger physicians will call me to ask whether they should examine patients or wait for the computer to start up. (Hospital manager 9)*

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PATIENT-PHYSICIAN-AI RELATIONSHIP

- Physicians emphasised that AI could help to alleviate their workload by relieving them of certain tasks
- Patients also anticipated that AI could reduce waiting times and administration tasks in healthcare
- AI can also serve as a tool to bring healthcare closer to people
- Better time management - creating more time for physicians to spend with their patients

So, suppose you already have an algorithm that, for example, saves you maybe five minutes per patient, and you are not overwhelmed with work. In that case, you can spend those five minutes on the relationship between you and the patient, which is greatly mutually beneficial. (Physician 2)

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PATIENTS AND AI

- Fast access to information/diagnosis
- Support in decision-making
- Processing of large databases
- Reducing unnecessary visits and waiting times

- Humans are social beings – they need face-to-face encounters, a human voice, and kind words
- Lack of empathy
- Problems of trust in technology
- Rare diseases and algorithm training

59.5% of students believe that the implementation of digital technologies will negatively affect the doctor–patient relationship

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- Many physicians envision a relationship as a synergy between themselves and AI.
- They believe that AI could provide technical support while they would remain responsible for the human-specific approach.
- Machines lack creativity and emotions, which are crucial for interpersonal relationships
- Patients noted that AI cannot provide emotional support or empathy for the patient's condition.

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TO CONCLUDE

- Effective communication, trust and personal interaction are the most essential aspects of the patient–physician relationship
- Relationship is already under threat due to excessive administrative tasks, physician workload, and the presence of technology that hinders direct interaction with patients
- Expectations of AI involve the reduction of tasks that unnecessarily burden physicians, allowing them to dedicate more quality time to patients
- Sparrow and Hatherley (2020) emphasise the paradox of the expectations of AI, which predict that, on the one hand, it will help improve the physician's efficiency but, on the other – taking into consideration the economics of healthcare – it might erode the empathic and compassionate nature of the relationship between patients and physicians as a result of increased numbers of patient consultations each day, due to the physician's increased efficiency.
- Keeping humans in the loop with regard to the inclusion of AI in healthcare will contribute to preserving the humane aspects of healthcare
- Involve patients in all stages – their opinions matter, and they can also be extremely creative

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