PANEL #1

PORTO
July 2024

IARIA Congress 2024 & DigiTech 2024

Theme: Digital Healthcare Services

CONTRIBUTORS

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Moderator

Prof. Dr. Ali Alouani, Tennessee Technological University, USA

Panelists

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Prof. Dr. Julio Teixeira, Universidade Federal de Santa Catarina, Brazil

Dr. Ejike Nwokoro MD, MPH, Head of Patient Insights & Data Strategy, HealthNet, UK

Prof. Dr. Tatiana Kalganova, Brunel University London. UK

Panelist Position

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Uwe Riss
OST

- **Digital Healthcare Service as Chance and Challenge**
- **AI-based Digital Health Services are powerful**
  - Diagnostic services can detect rare diseases
  - Therapies can be individualised
  - Physical conditions can be monitored on a continuous basis
  - Complex operations can be better supported
  - Professional social platform support care experts

  This can lead to a significant reduction in the burden on healthcare systems

- **Challenges**
  - Handling personal data is critical (data ownership, privacy etc.)
  - Questions of responsibility and liability
  - Existing regulations and rigid health service systems are often obstacles for digital health services

Panelist Position

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Julio Teixeira
UFSC - Brazil

PATIENT EXPERIENCE - PX

- **Artificial Intelligence and Data Analytics in Healthcare**
  - How can AI and data-driven healthcare support the journey and experience of patients and health professionals?
- **Mobile Health**
  - How can mobile apps improve health management and disease monitoring?
  - How do wearables improve patient care?

Panelist Position

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Julio Teixeira
UFSC - Brazil

PATIENT EXPERIENCE - PX

We have limited experience in the healthcare segment. However, let me share what our research and projects involving digital technology—especially CX, UX, AI, wearables, mobile apps, and data-driven strategies in general—have taught us.

Key-factors for success include:

- Omnichannel integration must be genuine and unified within a single platform (without this, at scale, it tends to be a fallacy).
- Monitoring transactional data often reveals more than users typically tell us (or prefer not to tell us).
- Data-driven decision-making should be top-down, where macro KPIs uncover opportunities in other micro indicators.

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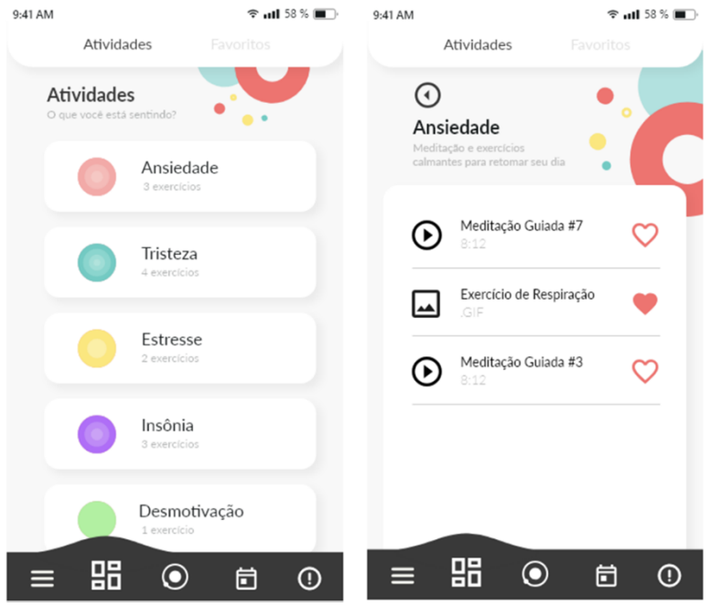

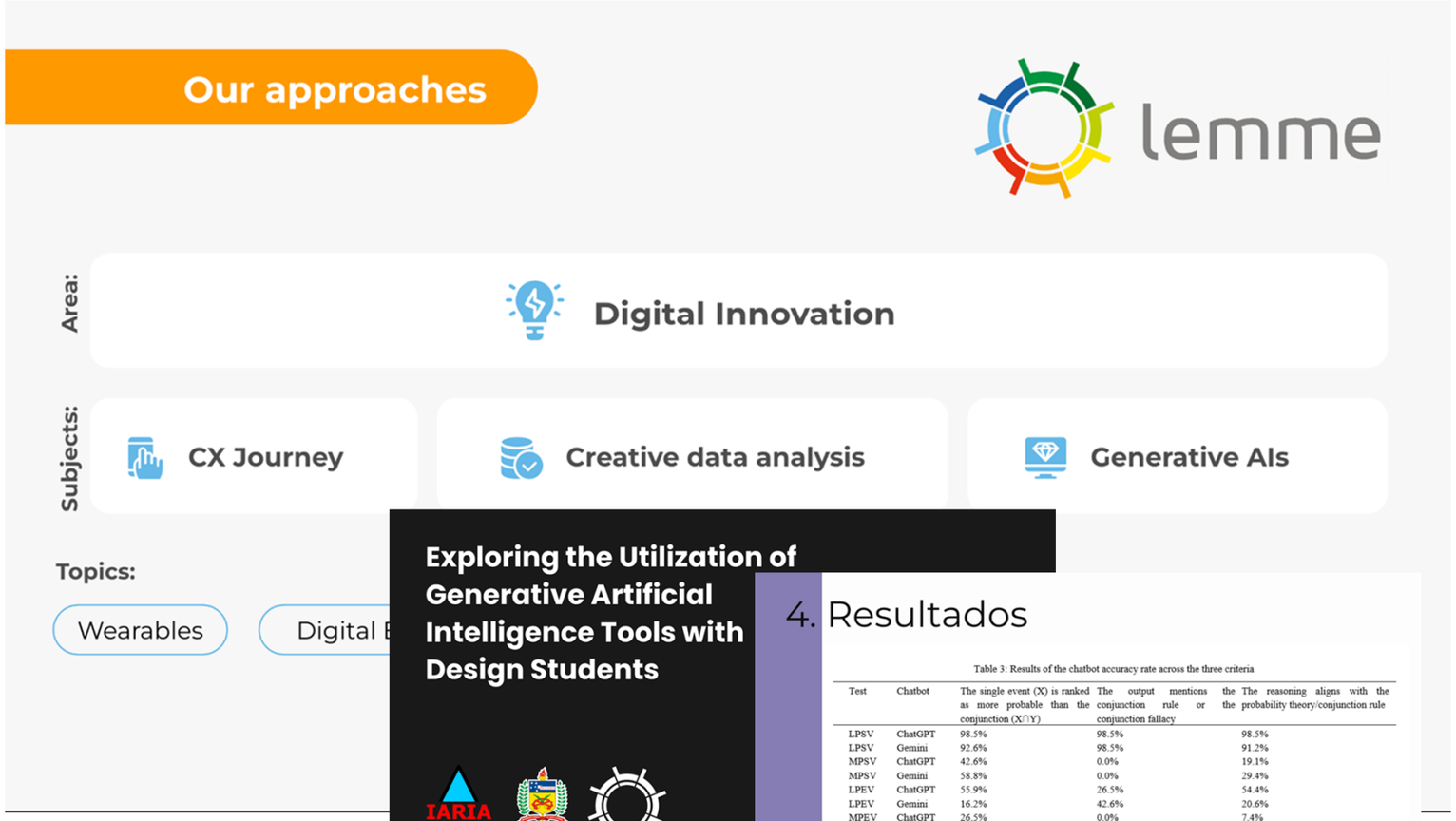

Exploring the Utilization of Generative Artificial Intelligence Tools with Design Students

IARIA UFSC

4. Resultados

Table 3: Results of the chatbot accuracy rate across the three criteria

Test	Chatbot	The single event (X) is ranked as more probable than the conjunction (X∩Y)	The output mentions the conjunction rule or the conjunction fallacy	The reasoning aligns with the probability theory/conjunction rule
LPSV	ChatGPT	98.5%	98.5%	98.5%
LPSV	Gemini	92.6%	98.5%	91.2%
MPSV	ChatGPT	42.6%	0.0%	19.1%
MPSV	Gemini	58.8%	0.0%	29.4%
LPEV	ChatGPT	55.9%	26.5%	54.4%
LPEV	Gemini	16.2%	42.6%	20.6%
MPEV	ChatGPT	26.5%	0.0%	7.4%
MPEV	Gemini	41.2%	0.0%	27.9%

AI

Panelist Position

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Digital Healthcare – the attention should surprise no one!

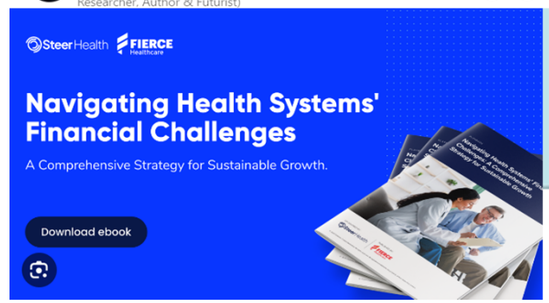
- **Unlikely that today's global health systems can cope without Digital Health! Here's why:**
  - Chronic disease prevalence is rising
  - We are living for longer, generally!
  - Number of healthcare professionals is not rising at same pace
  - The clamor to broaden access and reduce health inequalities
  - Patient expectations of better health system experience

- **Healthcare is moving/will continue to move closer to the home**
  - Global health systems reportedly lose approx. $2 trillion annually, due to wastage
  - Over 75% of WHO Member States apparently use some form of remote patient monitoring
  - Global Digital Health market could potentially be worth over $800 billion by 2027

Ejike Nwokoro
HealthNet UK

Will Digital Health Widen Or Close The Health Inequity Gap?

Bertalan Meskó, MD, PhD
Director of The Medical Futurist Institute (Keynote Speaker, Researcher, Author & Futurist)



Panelist Position

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Ejike Nwokoro
HealthNet UK

Digital Healthcare – What exactly is it?

> Ambiguity is the real definition of digital health. Digital health is a very broad term. In emerging technology, the same words mean different things. Make sure you ask the right questions to determine what "digital" actually means.
>
> @AnthonyWLuttenberger

- **Digital Health (All Health Tech is not Digital Health!)**
  - Technology that facilitates better health and well being
    - Connects patients and healthcare providers
    - Collates and tracks health data
    - Provides support for the patient
    - Examples include mobile health apps, wearable devices, telemedicine, remote patient monitoring, predictive analytics platforms etc

- **Opportunities for some serious benefits: From Big Data, AI/LLMs, IoT applications, and to wearables**
  - Efficiency in workflows – augmenting decision making
  - Risk identification & Facilitating preventative care
  - Reducing pressure on healthcare resources
  - Mitigating medication errors
  - Improving access security and scalability of initiatives

Panelist Position

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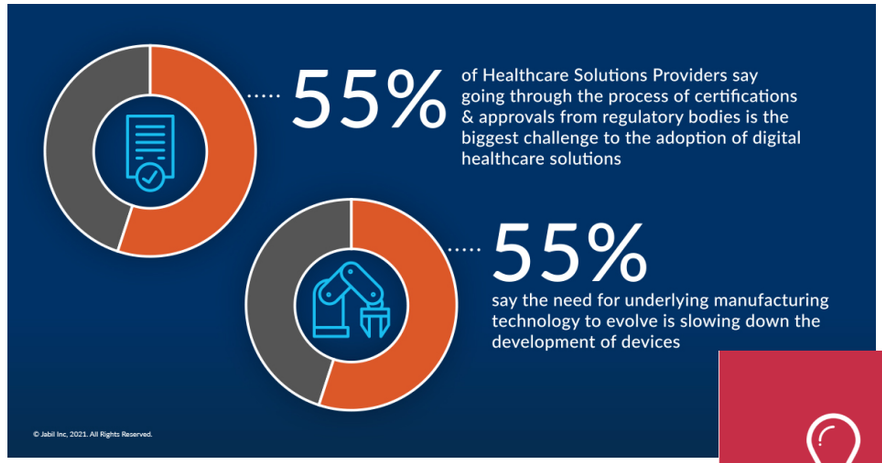
Ejike Nwokoro
HealthNet UK

Gaps remain but opportunities should not be missed

- **Digital Health Challenges**
  - Interoperability of systems
  - Data security and patient safety considerations
  - Inequality in digital literacy
  - Technology and ethics – who's responsible for what?
  - Regulatory oversight



- **Looking Ahead: Key Considerations**
  - Separate reality from fantasy!
  - Not just about market need but also about market demand
  - Plan early for regulatory and funding considerations
  - Innovate from the frontline: Technical meets Clinical
  - Forget the one-size-fits-all approach

Panelist Position: Context-aware AI

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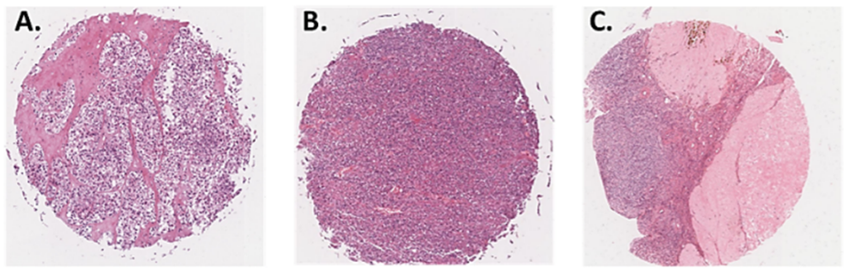
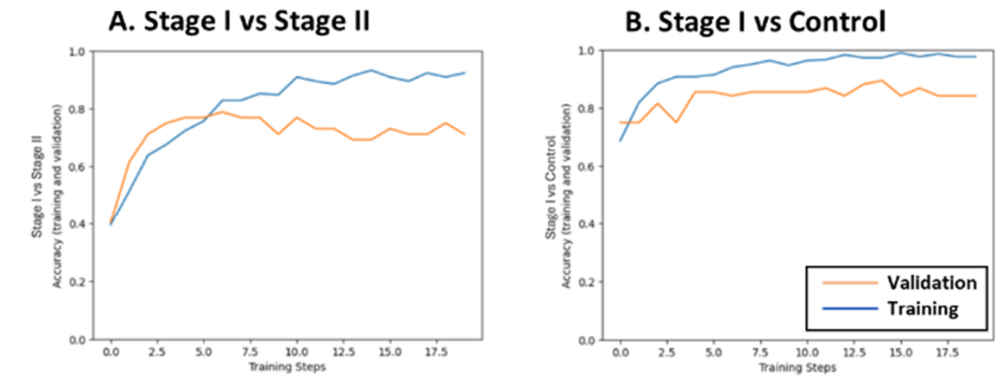
- **Panel #1 Digital Healthcare Services**
- AI-ready data: Data sharing and integrity



Creation of imaging database from whole slide images using H&E stained TMAs. *Representative images from: Stage I OC (n=3,098) (**A**); Stage II OC (n=805) (**B**); normal control (**C**).*

Early stage ovarian cancer detection with help of AI



Model accuracy learning curves, using machine learning image classifier for stratifying early-stage OC histopathology images. *The step-by-step training evolution of the machine learning classifier learning to differentiate: (A) Stage I vs stage II, and (B) Stage I vs control.*

Prof Tatiana Kalganova

Brunel University London

Panelist Position: System approach

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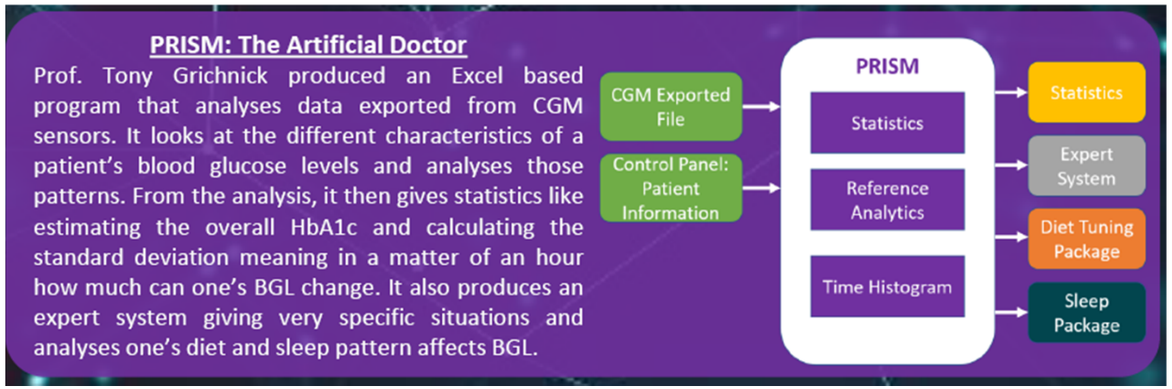
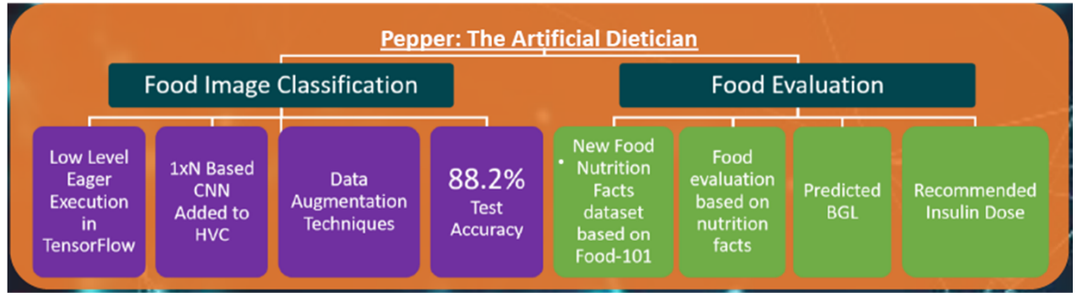
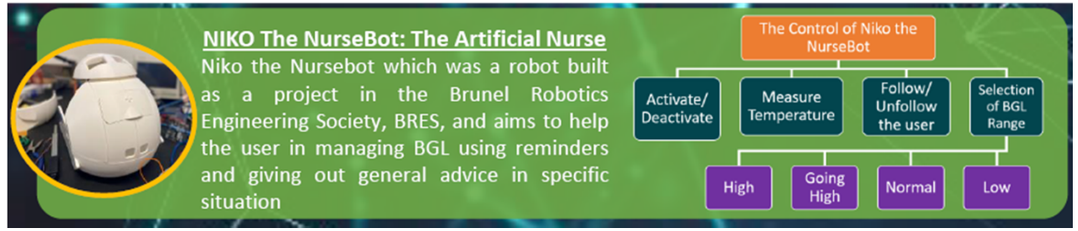
- D. clinic
- Diabetes, scientifically known as Diabetes Mellitus, is a chronic disease, affecting 463 million people all around the world, that causes high blood glucose levels. Blood glucose is a person's main source of energy which comes from the food eaten. In this project a conceptionally new framework has been introduced to help diabetics better manage their diabetes. This Framework includes the introduction and implementation of three different parts that represent an artificial Diabetes Clinic: the artificial doctor, PRISM, the artificial dietician, Pepper, and the artificial Nurse, Niko the NurseBot.







Panelist Position: Context-aware AI

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- Medication Adherence Prediction for Homecare Patients using Medication Delivery Data

Digital transformation and penetration of digital technology in every day life opens a new opportunities in digital management.

Patient's timeline journey can be visualised

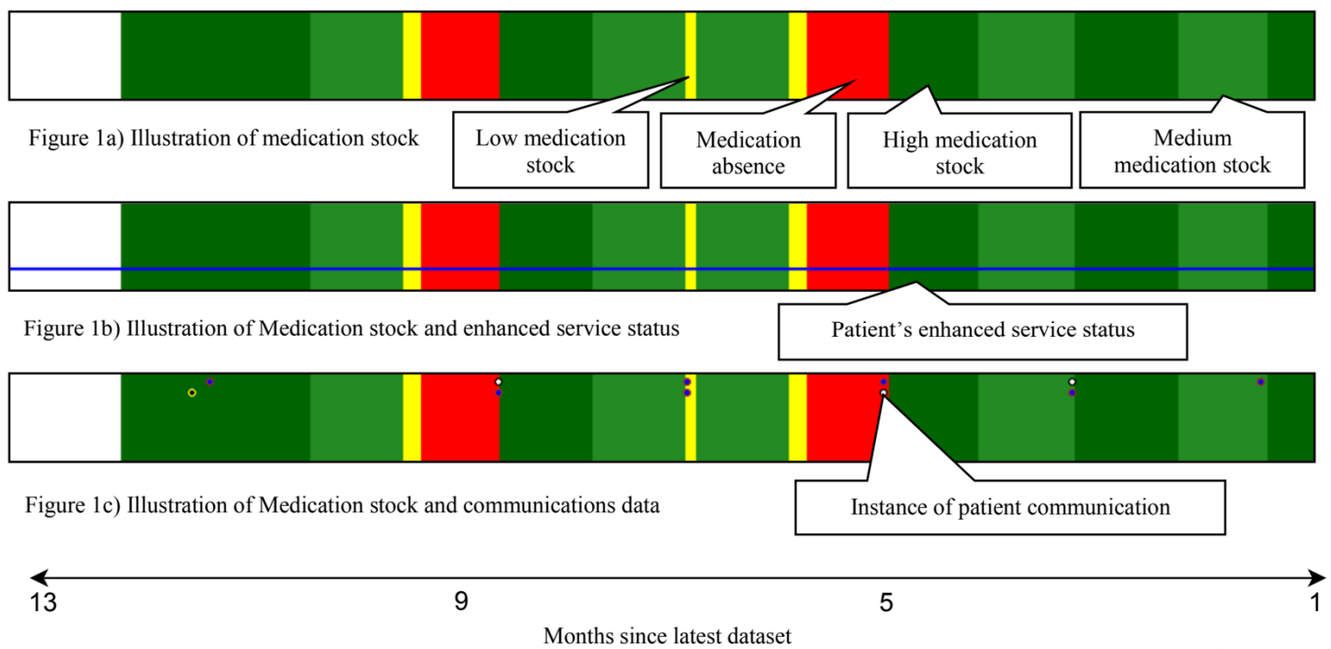

Figure 1a) Illustration of medication stock

Figure 1b) Illustration of Medication stock and enhanced service status

Figure 1c) Illustration of Medication stock and communications data