

# HEALTHCARE HACKATHON BAYERN

24. - 26. October 2024  
simultaneously in Erlangen &  
München

**EDIH**  
**DigiCare**

Kofinanziert von der  
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bayern  
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MEDICAL VALLEY

Schirmherrschaft:

Bayerisches Staatsministerium für  
Gesundheit, Pflege und Prävention





Hacker-Dinner (24. October 2024) and  
warm-up & get together



Friday, 25. October 2024 bis Saturday, 26.  
October 2024



Siemens Innovation Center, Erlangen and  
Design Offices Macherei, Munich



Challenges from the fields of women's health,  
pharmaceuticals, prevention, digital Care,  
AI



Challenge No.	Titel	Mentor / Support	Location
1	Quit addictions!	TUM	Munich
2	Building bridges between EMS and hospitals with automated feedback solutions	Wilhelm Löhe Hochschule	Erlangen
3	Making electronic patient record (ePA) understandable	StMGP	Munich
4	Electronic patient record (ePA) as preventive health platform of the future	StMGP	Erlangen
5	TI-Messenger: Less administrative processes, more time for care!	gematik	Munich
6	Development of an AI for preparation of "Überleitungsgutachten" (transition reports)	Medizinischer Dienst Bayern	Munich
7	Flex-Schedule: Dynamic waiting lists for hospital appointments	Klinik IT eG	Munich
8	Innovating Mammography - enhancing precision and comfort in needle insertion for biopsy	Siemens Healthineers	Erlangen
9	Elevating patient education and experience - Bridging the gap to accessible care	Siemens Healthineers	Erlangen
10	A companion app for menopause that truly understands its users	Bionorica	Erlangen & Munich

1

Location: Munich

Mentor: Technische Universität München (TUM)

Hashtags:

- # addictions
- # wearables
- # prevention
- # signal analysis
- # nudges

Drugs, alcohol, smoking, social media, and many more addictions require nudges for prevention. Using personalized activity patterns with wearables, we identify early biomarkers to signal addicted to change their behavior. Nudges are behavioral interventions to subtly steer choices toward “desirable” options. With mobility pattern analysis of individuals using wearables, we determine the onset of addictive behavior and can use this time frame for nudges to gradually change the behavior.

2

Location: Erlangen

Mentor: Wilhelm Löhe Hochschule

Hashtags:

- # EMS Feedback
- # Automated Feedback System
- # patient safety
- # professional development
- # Emergency Care Coordination

Imagine emergency medical teams like paramedics, who rush to help people in need. They make quick decisions about what might be wrong and start treatment right away. However, once they hand over the patient to the hospital, they rarely find out if their initial assessment was correct or how the patient turned out. This means they miss out on valuable feedback that could help them improve. This challenge is about creating a simple and automatic system that allows hospitals to send feedback to the emergency medical teams. This feedback would compare the paramedics' working assessment with the hospital's final diagnosis and treatment results. The goal is to help paramedics learn and improve their skills continuously by understanding how accurate their working diagnosis were. In addition, paramedics improve their self-reflection about done or not-done prehospital treatments in relation to the clinical diagnosis.

3

Location: Munich

Mentor: Bavarian State Ministry of Health, Care and Prevention

Hashtags:

- # ICD-Code
- # enhance patient-centered usability of ePA
- # electronic patient records (ePA)
- # reduce overload / complexity
- # translation of medical information

Effective communication of medical information is crucial for patient comprehension and engagement. The usability of the electronic patient record (ePA) could be enhanced by developing a translation app or tool that de-mystifies medical wording. Your challenge is to design an app or tool within the ePA that facilitates the translation and interpretation of medical data for patients and their relatives. This includes converting medical terminology and diagnostic codes into layman's terms and providing comprehensive explanations of e.g. laboratory results. Key features could include translating physician notes into patient-friendly language, interpreting laboratory values with context from validated medical sources, or explaining the implications of medical correspondence. The tool should leverage a curated list of validated sources such as "bund.gesund.de," reputable self-support groups, and hotline recommendations depending on the possible medical condition to ensure accurate and reliable information. Optionally, it could offer geo-based suggestions for local specialists for further treatment options or second opinions, and connection to regional self-support groups.

4

Location: Erlangen

Mentor: Bavarian State Ministry of Health, Care and Prevention

Hashtags:

- # digital health applications (DiGA)
- # electronic patient records (ePA)
- # preventive health
- # wearable data as pre-indication
- # exchange of information

Starting in January 2025, the structure of the electronic patient record (ePA) will change due to the introduction of the “ePA for everyone”. We're looking for innovative ideas on how to transform the ePA from a system that treats symptoms to one that focuses on prevention and active patient engagement, opening up new possibilities beyond storing patient data.

Your challenge is to design an embedded tool within the ePA that can analyze data and provide proactive health reminders, such as upcoming screenings. Consider the technical requirements and data formats necessary for this transformation. Additionally, explore how digital health applications (DiGA) can integrate seamlessly with ePA, creating synergies rather than simply storing unstructured data.

5

Location: Munich

Mentor: gematik

Hashtags:

# communication

# gematik

# messenger

# telematic infrastructure (TI)

# bots

Communication in the healthcare sector is often very analog - usually by telephone, letter or fax. These administrative processes cost doctors and patients a lot of time, money and nerves. Fortunately, there are now good ways to digitize paper-based processes. And not just on a small scale - but via a central digitization lever of the telematics infrastructure: the TI Messenger. In combination with automation, bots and AI, this communication channel has the ability to relieve administrative processes and focus on what is important: communication between people. The goal is to integrate messengers as a tool for communication in medical care processes, thereby noticeably relieving healthcare professionals.



6

Location: Munich

Mentor: Medizinischer Dienst Bayern (MD Bayern)

Hashtags:

- # machine learning
- # large language model
- # artificial intelligence
- # retrieval-augmented generation
- # care appraisal

Develop an Artificial Intelligence (AI) that reads PDF forms and automatically provides a preliminary assessment to create a transfer report. The AI should determine whether no care level, at least care level 1, or at least care level 2 is present. It is important to emphasize that this assessment is only preliminary and does not replace a complete care report. The complex process of creating a full report is not replaced (it is merely a recommendation).

7

Location: Munich

Mentor: Klinik IT eG

Hashtags:

- # appointment management
- # patient portal
- # waiting list
- # hospital network
- # resource management

Via the patient portal Mein-Krankenhaus.Digital, we connect over 100 hospitals with each other and with their patients. This allows patients to book appointments for treatments and register and prepare for them from home. But how do we deal with spontaneous absences? How can we bring together appointments that have become available at short notice and the needs of patients who are urgently waiting for treatment and are flexible in their scheduling?

### - Enhancing precision and comfort in needle insertion for biopsy

8

Location: Erlangen

Mentor: Siemens Healthineers

Hashtags:

- # mammography
- # needle Insertion
- # sensor system
- # enhancing precision
- # patient experience

In the realm of mammography, precise needle insertion is crucial for both diagnostic and therapeutic procedures. However, the current manual process can be challenging, leading to discomfort and anxiety for patients. We challenge you to transform the mammography journey into a more comfortable and reassuring experience for women. How can it be less daunting and what innovative solutions can be employed to ensure a smoother, more supportive experience for patients?

9

Location: Erlangen

Mentor: Siemens Healthineers

Hashtags:

- # patient education
- # patient journey
- # digital assistants
- # smart rooms
- # maternal health

In today's rapidly evolving healthcare landscape, patients face an overwhelming influx of information. Imagine creating personalized digital assistants that offer tailored support, educating patients about their unique disease pathways and treatment plans. These intuitive companions would empower patients by providing accurate information at their fingertips, transforming the journeys from overwhelming to empowering. Your participation can lead to transformative changes, making healthcare accessible, understandable, and supportive across all facets of care.



10

Location: Erlangen & Munich

Mentor: Bionorica

Hashtags

- # Companion app
- # AI helper
- # Menopause
- # Digital health
- # Personalized medicine

Develop a groundbreaking menopause app that leverages machine learning and diverse data sources to deliver empathetic support and guidance to women. This app will be the ultimate pocket companion, offering personalized recommendations to alleviate symptoms. It will set the standard for enhancing therapy adherence, education, and tracking.

Menopause typically affects all women between the ages of 40 and 55. Many experience significant symptoms during this time, and while medication can alleviate some of these issues, additional support is often necessary. To address this need, we aim to develop a digital companion that offers empathetic and personalized understanding for each patient.

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**VISIT US**

