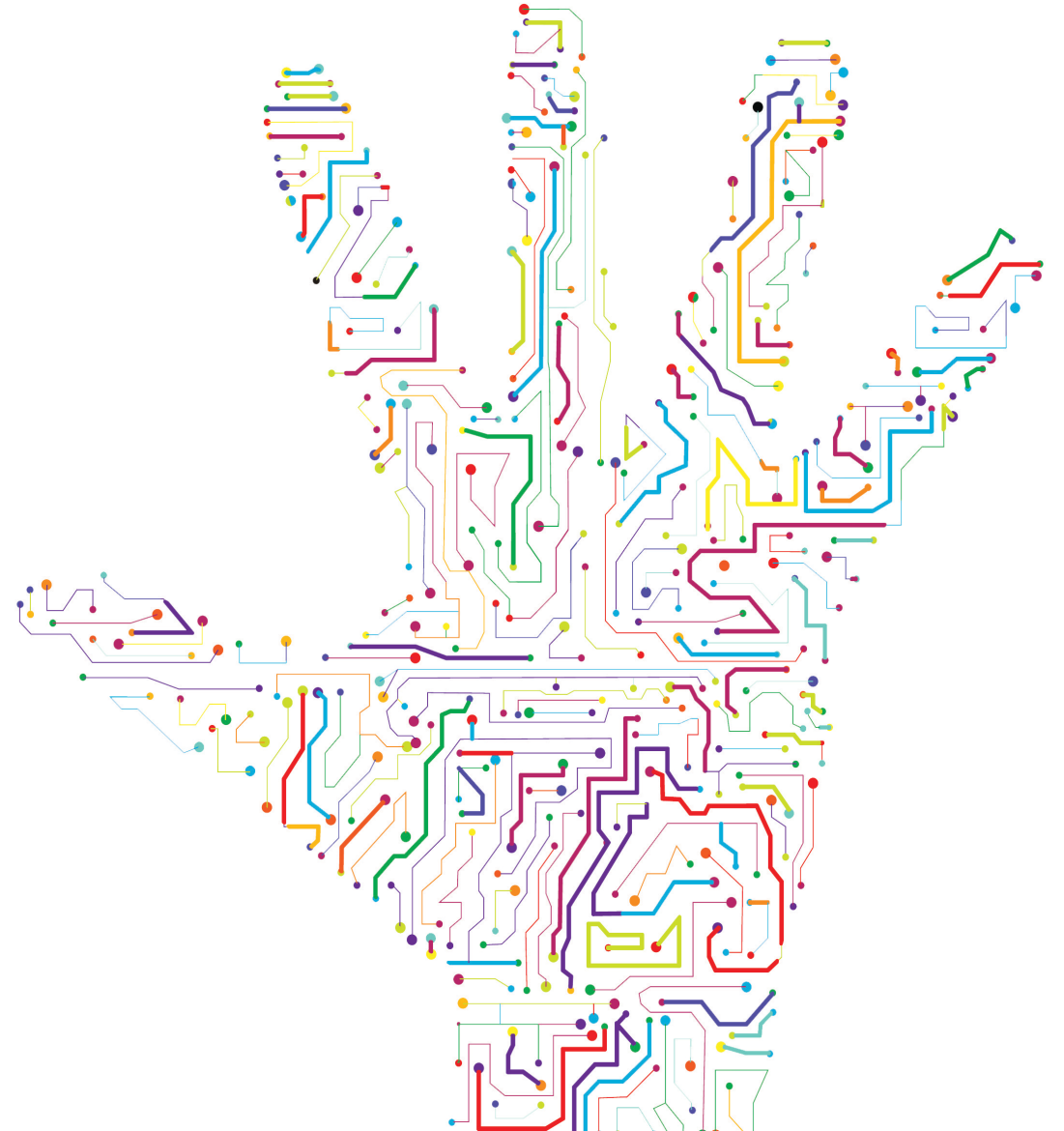# Hack For Healthcare

How can 3D-printing aid
underprivileged countries?

August 2021

Hackathon is a competition-style event where engineers and experts in a field get together to collaborate on a project and create novel solutions to a given problem in a short period of time

Hack for Healthcare will bring together some of the brightest minds from Switzerland's best institutions, as well as industry professionals from the world's most reputable organizations

Participants

- Engineers from UZH/ETH with experience in 3D printing
- Final year Medical students and/or doctoral candidates
- Students from developing countries (LATAM/Africa via Zoom)

Mentors

- Experts across Medical specializations to explore possible applications
- Will be teamed up with participants

Jury

- Medical Doctors and Scientists
- Management Consultants
- World Health Organization representatives
- Humanitarian organization representatives

Expert Panel

- Start-up/company founders in Medtech
- Industry experts specializing in 3D printing in Medicine
- Humanitarian organization reps

Expert Panel

Experts give captivating lectures, provide insights into their industry experience and lead discussion panels

Jury

Jury provides 360° view of the problem, evaluates each team's solution based on multiple criteria and decides on the winners

Mentors

Teamed up with the teams, Mentors coach participants and provide continuous feedback on their work

Participants

Participants come up with ideas, develop working prototypes and models, and prepare presentations to pitch their solutions

During this Hackathon, we will explore applications of 3D printing in Medicine* and **create new solutions to help in a humanitarian context**

The ongoing COVID-19 pandemic showcased the need to innovate to overcome interruptions in global supply chains and shortages of medical material

There is no other technology available, aside from 3D printing, that has the agility to rapidly prototype and manufacture devices that can be used to help people and healthcare professionals in developing countries

* A set of questions presented to the participants will be developed with our partners

Interdisciplinary teams of 40 participants

Expert coaching and jury

48 hour brain sprint

The winning solution will be used for humanitarian purposes

Key success criteria

- Feasibility
- Scalability
- Ease of implementation
- Impact

Key outcomes

Prototype &
Minimum Viable Product (MVP)

Validated scaling model

Implementation plan

Hack for Healthcare will take place in **Zurich in October* 2021 as an in-person event**

📍 University of Zurich

📅 Friday to Sunday

Friday

On the first day we make sure people get to know each other, are excited and are all on the same page

Saturday

Teams come up with the first concepts. Mentors coach participants, Jurists evaluate solutions, and Experts give inspiring speeches

Sunday

Teams finalize their solutions and present their projects. Winners are announced

Our Expert Panel

**Matthieu Komorowski,
MD PhD**

Dr. Matthieu Komorowski holds a PhD in Medicine and Bioengineering from Imperial College London, was previously a visiting scholar at the Massachusetts Institute of Technology, and an affiliate of Harvard University.

His research brings together Machine Learning and critical care expertise to build clinical decision support systems. His work on reinforcement learning was awarded the first prize of Research and Innovation by the British Royal Society of Medicine and was published in Nature Medicine.

Due to his interdisciplinary background and entrepreneurial spirit, he is the ideal candidate to be on the expert panel of our hackathon.

**Eisuke Shimizu MD, PhD,
CEO of Oui Inc.**

Dr. Shimizu is an ophthalmologist and a senior consultant at the Keio University Hospital in Tokyo.

He is the CEO and founder of Oui Inc - a startup that couples a 3D printed ophthalmoscopic smartphone attachment with an app to helps diagnose common eye diseases in underprivileged countries, leading to reduction in blindness. His startup won the Eye Health Hero Award 2020 and will be participating at the TechEmerge Health East Africa Summit as one of over a thousand startups who applied.

He is an expert on 3D printing applications in a humanitarian context and thus an ideal candidate for our expert board.

Dr Ulf Heim,
Partner, McKinsey & Company

Ulf is a leading expert within McKinsey's European Product Development Practice. His client work focuses on consumer goods and high-tech industries, as well as on automotive & assembly industries, with special emphasis on R&D strategy and product development.

He a is member of the European Design-to-Value (DTV) leadership group and is co-leading DTV labs in Munich and Taipei. McKinsey's proprietary algorithms, databases and clean-sheet solution structures have been developed based on Ulf's client work.

Ulf has over 10 years of industry experience with microelectromechanical systems and high tech R&D equipment. Prior to McKinsey, he served as Head of R&D for JENOPTIK Mikrotechnik GmbH and was founder & CEO of a MEMS startup. With his expertise in product development and experience across a variety of industries, Ulf is an indispensable member of our expert panel.

**Expert,
Amazon Web Services**

To be confirmed

**Expert,
Microsoft Research**

To be confirmed

Our Jury

Prof. Patricia Schlagenhauf, PhD

Patricia Schlagenhauf is a Senior Scientist and Professor at the University of Zurich, Co-Director of the WHO Collaborating Centre for Travellers' Health (Switzerland) and is active in research, teaching and travel clinic duties.

She is the Zurich GeoSentinel Site Director, Chair of the GeoSentinel, External Collaborations Committee (ECCo) and EuroTravNet Coordinator/Steering Committee member and a member of the Swiss Expert Group for Travel Medicine. She serves the WHO as Collaborating Centre Co-Director and as a member and Chair of various WHO advisory committees on travel medicine.

Her research focus areas are travellers' malaria, epidemiology and prevention of travel associated disease, travellers' vaccines and medications, gender issues in travel medicine. She is the author of more than 160 peer reviewed papers.

Jeremy Deuel,

PhD

Dr. Jeremy Deuel graduated in Zurich and has a PhD in molecular physiology. He is currently working as a postdoc in the Lab of Professor Tony Green in Cambridge UK on the molecular mechanisms of JAK/STAT signalling in myeloproliferative neoplasms.

He has a strong background in developing and applying software tools to analyze and integrate large datasets of multi-omics as well as patient-centered database, bridging bench and bedside also on a computational level.

With his strong background in clinical as well as pre-clinical sciences he is an ideal candidate for our jury.

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**Luise Ammerschuber,
YESS Impact**

Luise is the Director and Co-founder of YESS Impact, a company specializing in social business, impact investing and gender empowerment. She is an official advisor to the Swiss Development Cooperation, a frequent international speaker and author of several guidebooks.

Her program "YESS Impact Sisters" supports local communities in Nigeria and Uganda by improving their livelihoods through accessible micro-credit and insurance systems.

Luise's special interest is in employing the newest technologies for impact by bringing together key actors in tech, investment and NGOs like in her current project on "Blockchain Technology for Social Impact". Luise holds an LLM Master (Honors Program) in International Human Rights Law and a BA (Honors) in International Relations and Development Studies from Maastricht University.

**Expert,
NetGuru**

To be confirmed

Hack for Healthcare team

Michel Bielecki, MD

Michel is the CEO of GobiX, which he co-founded during the pandemic to help produce 3D-printed nasopharyngeal swabs for COVID-19 testing for the Swiss Armed Forces. GobiX is innovating in the field of saliva testing, and recently started Europe's first Covid-19 home sampling service for travelers.

He is a postdoctoral researcher on COVID-19 at the University of Zurich and University Hospital Zurich and a prospective Harvard Public Health graduate.

In summer 2020 he was a commissioned Chief Medical Officer for a NATO base advising on Covid policies. He is a regular speaker for the leadership panel of the German Bundeswehr on AI in medicine. He won the 2018 Microsoft Health Hackathon in London.

Patrice Gobat, MSc ME

Patrice is a co-founder and CTO of GobiX and R&D engineer at Heberlein AG. He is a 3D printing specialist with extensive work experience in production management and process optimization.

Patrice was formerly a product development engineer at Wyss Zurich, where he led the design, development and implementation of an exoskeleton that is currently used for academic teaching of medical undergraduate at ETH Zurich.

He also acted as a production manager for AMZ Racing and is currently finishing his Master in Mechanical Engineering with a focus on robotics and medical engineering at the Swiss Federal Institute of Technology

Onicio Batista Leal Neto, PhD

Onicio holds a PhD in Epidemiology and Public Health, with a focus on Digital Health and Big Data in medicine

He is the founder of Brasil Sem Corona, the biggest participatory disease surveillance strategy in Brazil, and the Executive Director at Epitrack, a service which uses AI to predict health events and solve complex epidemiological problems

He is a regular speaker at various health conferences and events, including TedX

Onicio is also an independent consultant for UNICEF, helping develop Digital health solutions in a number of African countries

Oliver Bichsel, MMed

Oliver is a trained Neurosurgeon who currently does PhD in Neurology at the Swiss Federal Institute of Technology (ETH), focusing on brain-computer interfaces and 3D printing in biomedical engineering.

His research combines data analytics and neuroscience to create algorithms that establish early detection of Alzheimer's and Parkinson's diseases.
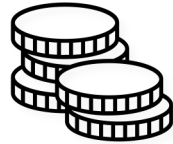
Our Partners

Our Partners

We are looking for sponsors

While the University of Zurich provided us with CHF10,000 grant, we would love to partner up with some like-minded professionals and organizations to further enhance the event, and make it a truly exciting and rewarding experience

To triple the budget of the event
raise CHF20,000 more

To offer opportunities to the participants
prize money, employment, etc.

To collaborate with during the event
experts, jury and mentors

Partnering with us presents many benefits

A gush of fresh ideas

All novel concepts and ideas generated during the Hackathon can be further developed into full-scale solutions

Access to top talent

From University of Zurich to the Swiss Federal Institute of Technology, this Hackathon will bring together some of the brightest minds in tech & science

Two days of networking events with the most prolific industrial and academic professionals globally

Action with purpose

The winning solutions will be used for solve a variety of humanitarian problems in underprivileged countries

Branding

Supporting young minds in science for humanitarian purposes will cement your organization's reputation as a Thought Leader in its field

The presence of prominent Swiss and international media outlets will present opportunities for positive publicity

Thank you

Hack for Healthcare website is currently being developed and will contain all further information about the Hackathon.

Meanwhile, we will be pleased to address your questions.

Please reach out to us on:

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