

Funded DFF Projects

2024 Call – Award Date 1

**President's Office**

ZHAW digital

ZHAW digital congratulates the following projects for having been selected in the first award date of the 2024 DFF Call. Projects are listed alphabetically by title and as submitted.

## Impact Projects

### **Einsatz von ChatGPT und Co. in Lehre und Forschung an der ZHAW**

[Christian Rapp](#)

In einer Pilotstudie haben wir im Sommer 2023 die Nutzung von KI bei der Erstellung von Bachelorarbeiten an vier Departementen der ZHAW untersucht. In diesem Projekt wollen wir die Studie verfeinern, an möglichst allen Departementen durchführen und um die Sicht der Dozierenden erweitern.

### **Fair DFF voting design**

[Florian Spychiger](#)

The voting process for DFF-proposals has been a point of much discussion. We aim to improve the voting mechanism to account for partiality based on relationships, campaigns and mobilization activities by compiling the relevant theory of digital democracy and suggesting a new mechanism.

### **Hack4SocialGood 2024 – Promoting Digital Inclusion**

[David Lätsch](#)

Hack4SocialGood, a 2-day hackathon, bridges tech and social sectors, fostering collaboration to tackle digital challenges in social work. It unites diverse experts to create digital solutions for real-world social challenges, enhancing organizations' impact and promoting digital literacy.

### **Net zero: a computer simulation game for sustainable cities**

[Andri Gerber](#)

Imagine a game where you are responsible for an average swiss city in 1990 and to win you have to reach the zero emission goals by 2050. This is your role in a game that handles the influence of the construction industry on co2 emission and waste production. The game is developed for schools.

### **Soforthilfe bei Schulstress: Digitales Feedbacksystem für Jugendliche**

[Anthony Klein Swormink](#)

40 % der Schweizer Jugendlichen stresst die Schule einigermaßen oder sehr. Wir testen mit ihnen, inwieweit Wearables in Kombination mit App helfen, Stressoren und Stresszustände besser zu erkennen und zu bewältigen. Der Stress wird in Echtzeit gemessen und sie erhalten sofort Feedback und Tipps.

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## **ZHAW Research Tinder – Finde Deine Forschungspartner**

[Kevin Andermatt](#)

Über ZHAW Research Tinder (Arbeitstitel) ermöglichen wir vollen Zugang zur geballten Brain-Power der Hochschule. Mit dieser Browser-App können Forschende sich einfach und spielerisch über Organisationsgrenzen hinweg vernetzen und gezielt die richtigen Partner\_innen für Forschungsprojekte finden.

## **Innovation Projects**

### **Can Generative AI Simplify Complex Discrete Process Modelling?**

[Lukas Hollenstein](#)

Advancing the digitization of complex process modelling in life sciences, our project explores AI's potential in generating process diagrams and models. This research aims to simplify modelling procedures, enhance simulation accuracy, and facilitate the development of efficient digital twins.

### **Learning Copilot - A Learning Assistant based on Large Language Models**

[Jochen Wulf](#)

We develop a Learning Copilot that utilizes large language models (LLMs) like ChatGPT to assist students in understanding lectures and preparing for exams. The Copilot leverages a knowledge base of lecture transcriptions, papers, and books. We aim to evaluate its effectiveness in two ZHAW courses.

### **Multimodal Anonymization of Gameplay Data**

[Elena Gavagnin](#)

Gameplay data is used to study human behaviour across disciplines. Unfortunately gameplay corpora are not anonymized, limiting their use for open research. In this project we use transformer-based multimodal AI methods to anonymize visual and textual gameplay data, while preserving game dynamics.

### **Personenlenkung zur Gestaltung sicherer Veranstaltungen durch Faster Than Real-Time (FTRT) Simulationen**

[David Bernhardsgrütter](#)

Ziel ist die Weiterentwicklung einer Software zur Simulation von Personenströmen, so dass diese schneller als in Echtzeit berechnet werden. Das Tool ermöglicht es, an Veranstaltungen Kapazitätsengpässe frühzeitig zu erkennen und kann zur dynamischen Steuerung von Besucherströmen eingesetzt werden.

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**SmartLabHub - Remote laboratory data infrastructure**[Oliver Döbrich](#)

The project aims to establish a digital remote infrastructure for lab environments at ZHAWs IMPE, leveraging the Internet-ofThings to connect lab equipment with advanced algorithms. The proposed system ensures low-threshold access for scientists, providing a foundation for Industry 4.0 initiatives.

**TinyML Grasshopper Classifier: Enabling Non-Invasive Biodiversity Monitoring**[Tobias Peter](#)

Using AI to classify insect sounds, particularly grasshoppers, is a promising method to monitor biodiversity non-invasively in the field. We propose a sustainable tiny machine learning model to efficiently classify grasshoppers in real-time using edge computing with minimal computational resources.

**Towards Enhancing Large Language Models with SNOMED CT for Multi-document Patient Records Summarization: A feasibility study**[Ahamad Aghaebrahimian](#)

Clinical physicians spend about 40% of their work time for reading and writing patient documentation. We will employ NLP, SNOMED CT, and Large Language Models (LLM) to generate concise, accurate, and interoperable summaries of patients' records, thus saving time, effort, and resources.

**Transforming clinical assessments: Explicitly articulating implicit clinical decision-making to train AI**[Lena Sauerzopf](#)

Researchers are involving artificial intelligence in assessments, using therapist ratings to create a ground truth. The project aims to assess the reliability of video-based observations for compensatory movements post-stroke to promote Artificial Intelligence (AI) assisted rehabilitation.