

## 2024 LiA Project Outline

### I. Your full name and University of affiliation

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University:	The University of Hong Kong

### II. University Contact

Full Name:	Chim Tat Wing
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### III. Title of your LiA Project

The Summer Immersion Programme

### IV. Organisation Contact

Organisation Full Name:	Laboratory of Data Discovery for Health (D <sup>2</sup> 4H)
Supervisor Full Name:	Professor Ho Joshua Wing Kei
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### V. Goal

In the wake of the COVID-19 pandemic, public health has become a critical area of focus worldwide. I am dedicated to investigating how health technologies can be leveraged to improve public health across various dimensions. Having conducted research in this area last year, I am now keen to delve deeper into different sectors of health technologies. At the forefront of this mission is the work being carried out at the D<sup>2</sup>4H lab, where innovative mobile applications are being developed to reduce barriers to accessing medical services. My goal is to contribute to these efforts by collaborating with the R&D team to enhance these technologies, while also directly supporting the community—particularly patients in hospitals. Additionally, I aim to inspire the next generation by introducing teenagers to the exciting field of medical AI through taster lectures, which will provide them with the knowledge to embark on a career in bioinformatics.

### VI. Objectives

#### 1. Development and Enhancement of Healthcare Technologies:

- Contribute to the development of mobile applications that improve public health outcomes by making healthcare services more accessible.

#### 2. Patient Engagement and Data Collection:

- Engage with patients at Queen Mary Hospital to collect crucial health data, such as heart rate, which will inform ongoing research and technological improvements in the healthcare sector.

### 3. Empowering High School Students through Education:

- Conduct taster lectures at HKU for high school students from disadvantaged backgrounds, with the aim of empowering them to make informed decisions about higher education and careers in bioinformatics.
- Provide students with hands-on exposure to the field, inspiring them to pursue careers in medical AI and health technology.

### 4. Advancing the Use of Generative AI in Medicine:

- Support the development of a medical chatbot by verifying audio transcriptions and translations of consultation recordings, with a focus on enhancing medical education.

## VII. Challenges & Solutions

There are three types of work I am responsible for:

- Conducted data collection at Queen Mary Hospital (QM), focusing on gathering patients' heart rate data for research purposes.
- Assisted in delivering taster lectures to high school students, providing them with an introduction to bioinformatics and medical AI.
- Verified audio transcription and translation of consultation recordings generated by AI Language model, contributing to the development of a medical chatbot aimed at improving medical education.

Work	Challenge	Solution
Data collection in QM	Patient unwillingness to participate in the study	Build rapport with patients, explain the study's importance, and ensure confidentiality. Provide incentives or reassurances about the benefits of participation.
Teaching assistant of taster lectures	Engaging students, especially those from disadvantaged backgrounds	Use interactive and relatable teaching methods. Tailor content to their interests, and provide mentorship to keep them motivated and involved.
Consultation recording verification	Ensuring accuracy of AI-generated transcriptions and translations	Manually review and compare AI output with original recordings. Correct errors, and provide feedback to improve the AI model's performance. Establish a quality control process to ensure the final outputs are reliable.