



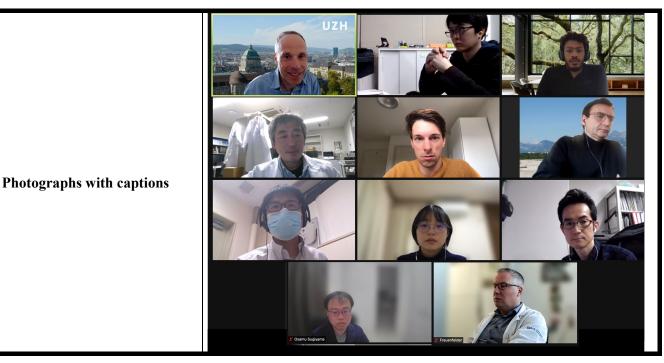
Report of UZH-KU Joint Research Project

Section 1

Project title:	Zurich-Kyoto Future Medicine Cluster: Creating Multilingual Medical AI
	Solutions
Project coordinator (KU)	Koji Fujimoto
Name	Associate Professor
Position	Department of Real World Data Research and Development, Graduate
Faculty, department	School of Medicine
Project coordinator (UZH)	Michael Krauthammer
Name	Professor Dr. Med.
Position	Professor Department Quantitative Biomedicine (UZH), Chair of Medical
Faculty, department	Informatics (USZ)
	From: May 2021
Period of project	To: March 2022
B 1 41 41	Online organization
Project location	
	[KU] Faculty members: 6 Students: 1 Others: 0
	[UZH] Faculty members: 3 Students: 1 Others: 3 (Post-docs)
No. of participants	Others:
	*A montisiment list can be attached instead of completing the charge section. The list should
	*A participant list can be attached instead of completing the above section. The list should include the details above.
URL at which project	Progressive Transformer-Based Generation of Radiology Reports
outcomes can be viewed (e.g.	
workshop	<u>Farhad Nooralahzadeh</u> , Nicolas Perez Gonzalez, <u>Thomas Frauenfelder</u> , <u>Koji</u>
notifications/programs/reports,	<u>Fujimoto</u> , <u>Michael Krauthammer</u>
evidence of academic papers	https://aclanthology.org/2021.findings-emnlp.241/
published or otherwise made	
available, etc.)	











Section 2

Summary of the project (approx. 200 words)

*KU project leaders are required to submit a summary of the project in Japanese in addition to the English summary (approx. 400 characters).

The Zurich Kyoto Future Medicine Cluster started as a collaborative initiative by Professor Michael Krauthammer from UZH and Dr. Koji Fujimoto from KU. Based on the experience on a shared project to automatically generate medical reports from chest x-ray images, in this project we sought for a possibility to find future collaborators to further establish this partnership by holding a workshop on "multilingual capabilities of AI solutions in medicine".

As a major outcome, we held two workshops, as well as five individual interview series to discuss and share information on (1) expectation and prospect of NLP in medical decision support systems, on (2) dataset generation and on (3) special research interests of the individual researchers. Another outcome of this project was a joint conference paper ("Progressive Transformer-Based Generation of Radiology Reports") accepted in EMNLP 2022. We also participated in a shared task workshop (https://sociocom.naist.jp/real-mednlp) on medical NLP as an international team (Kyoto-Zurich) with five additional new members (3 from KU, 2 from UZH), where we jointly submitted two conference papers (under review).

このプロジェクトでは、自然言語処理の医療応用に経験豊富なスイス大学の Prof. Krauthammer と京都大学の放射線科医師である藤本が、これまで培ってきた胸部 X 線画像からの文章生成の共同研究での経験を生かし、京都大学・スイス大学の双方でさらなる共同研究者を発掘すべく「医療における多言語処理 AI の将来」をテーマとしてワークショップを開催した。

プロジェクト期間内に2回のワークショップを開催したほか、双方の施設の研究者に対する個別のインタビューを計5回開催し、(1)自然言語処理の医療応用に何を期待するか(2)データセットの作成および共有における問題点(3)各研究者が専門とする研究内容 について、議論と情報共有を行った。このプロジェクトの成果として、医用画像からのテキスト生成に関する論文("Progressive Transformer-Based Generation of Radiology Reports")が採択されたほか、京大3名、チューリヒ大2名の新規研究者を加えた国際共同チームで公開データを用いたシェアードタスク・ワークショップ(https://sociocom.naist.jp/real-mednlp)に参加し共著で論文2編を投稿した(査読中)。