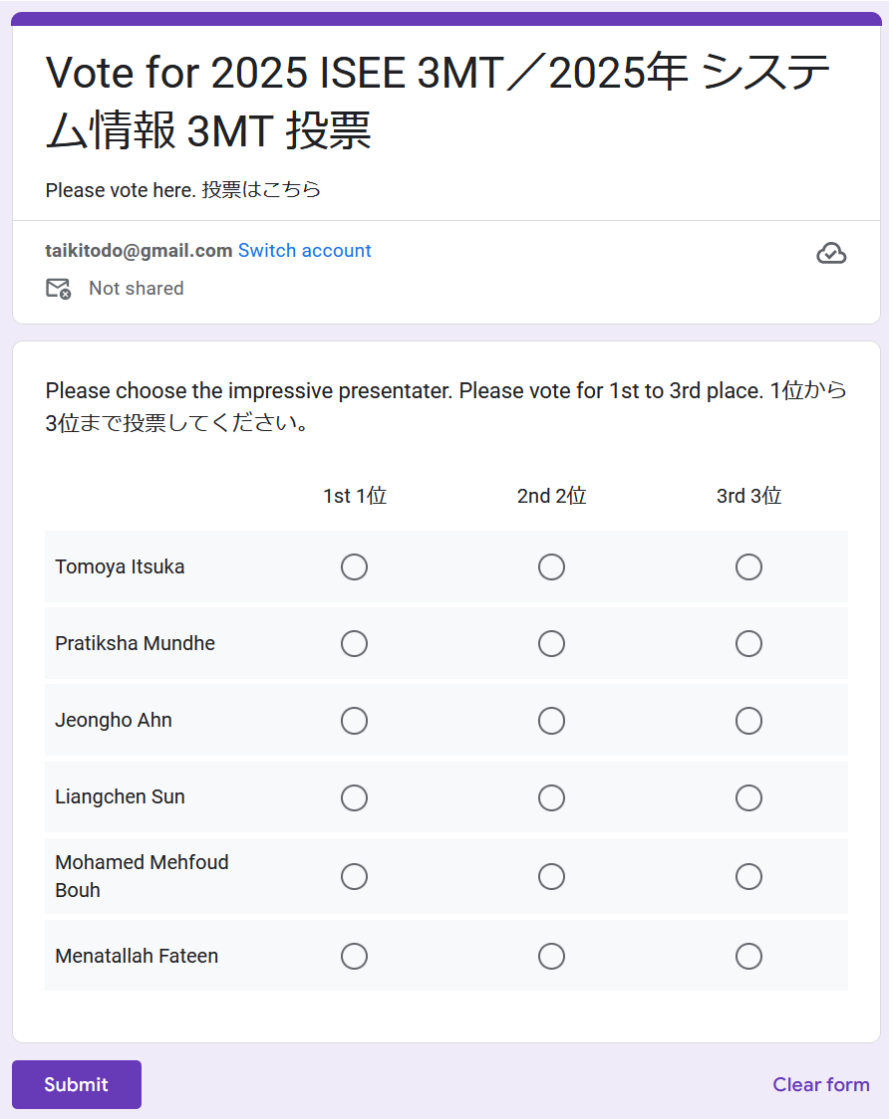
ISEE 3MT（システム情報 3MT）

“3MT” means Three Minute Thesis. Ph.D. course students will present their research in three minutes. Today, ten students will come. This is a competition. Please vote for the most impressive presenter. The 1st to 3rd outstanding presenters will receive the awards. Please google “ISEE 3MT” and find the voting site in the HP of ISEE 3MT.

“3MT” とは，Three Minute Thesisを意味します．博士課程の学生が自身の研究を3分間でプレゼ ンテーションします．本日は10名の学生が登壇します．発表後に投票を行いますので，皆さん， 審査をお願いいたします．詳細は「ISEE 3MT」で検索するとHPに投票サイトへのリンクがあります．1位から3位には賞品が贈呈されます．

https://www.isee.kyushu-u.ac.jp/3mt.html

URL for Vote



Vote for 2025 ISEE 3MT／2025年 システム情報 3MT 投票

Please vote here. 投票はこちら

taikitodo@gmail.com Switch account

Not shared

Please choose the impressive presentater. Please vote for 1st to 3rd place. 1位から3位まで投票してください。

	1st 1位	2nd 2位	3rd 3位
Tomoya Itsuka	○	○	○
Pratiksha Mundhe	○	○	○
Jeongho Ahn	○	○	○
Liangchen Sun	○	○	○
Mohamed Mehfoud Bouh	○	○	○
Menatallah Fateen	○	○	○

Submit

Clear form

The same link is also on the moodle page of the ISEE 3MT 2025:

https://moodle.s.kyushu-u.ac.jp/course/view.php?id=62261

ISEE 3MT Program

Start	End	Title	Presenter	Lab
9:30	9:40	Opening	Prof. Makoto Yokoo, Dean	
9:40	9:44	Indoor Robot Localization with Wireless Distance Sensors	Tomoya Itsuka	IST Kurazume Lab
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ISEE 3MT

Opening

from

Prof. Makoto Yokoo

Dean of ISEE

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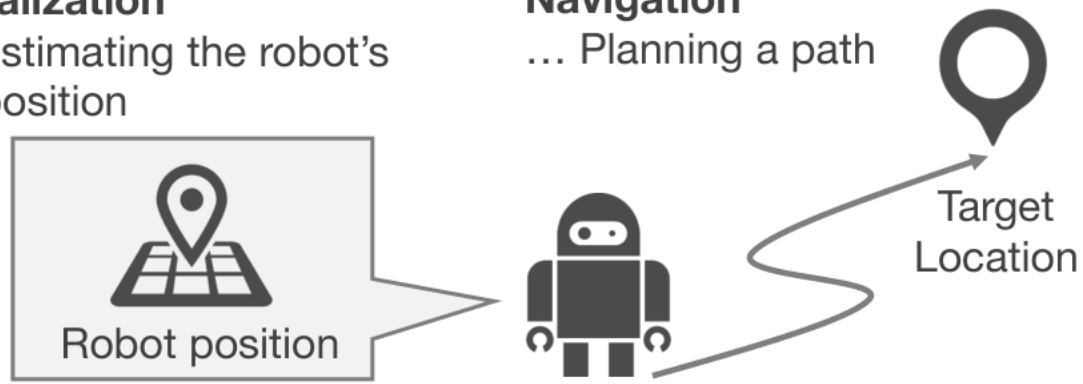
Indoor Robot Localization with **Wireless Distance Sensors**

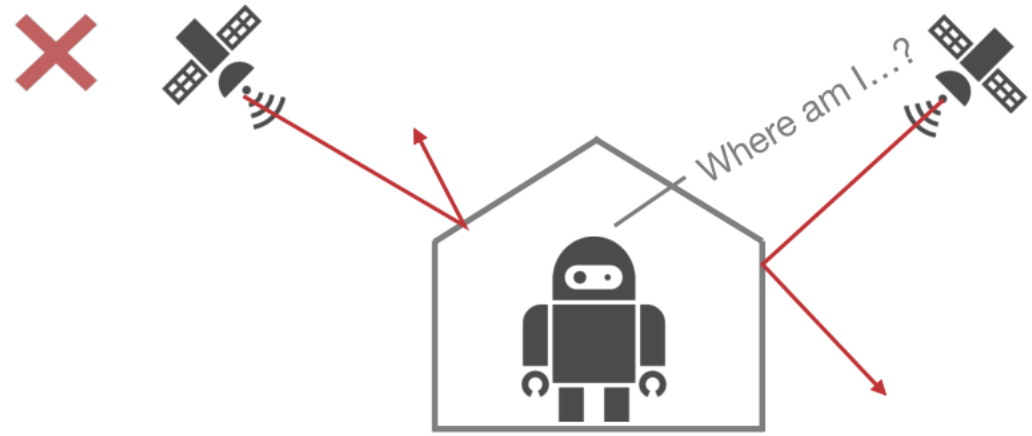
I **Accurate** and **Fast Localization** is key to autonomous driving for robot services

Localization
… Estimating the robot's position

Navigation
… Planning a path

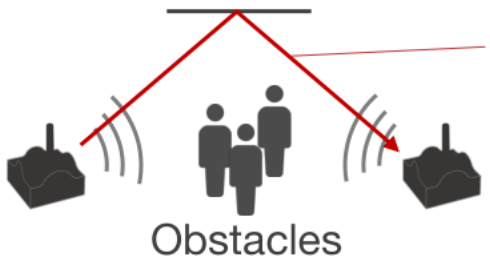


II **GPS / GNSS is Unavailable** in Indoor Environments



III **Wireless Distance Sensors** measure Beacon-to-Beacon Distance

- Ultra-Wide Band
- Ultrasonic



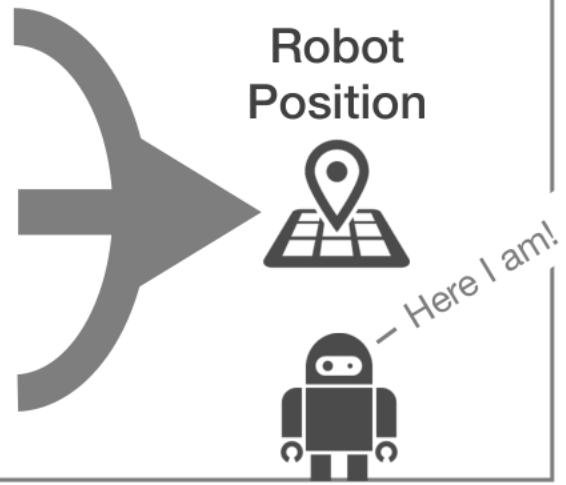
Multipath Effect: measures reflected paths from walls or ceilings

IV **Sensor Fusion** enables Accurate and Fast Localization in Indoor Environments

Wireless Distance Sensors
… Measure distance from known points

Wheel Rotation (Odometry)
… Fast, but prone to accumurated errors

LiDAR
… Measures surrounding shapes



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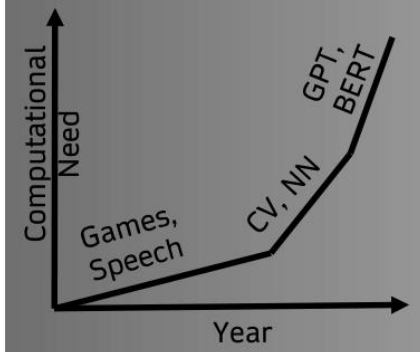
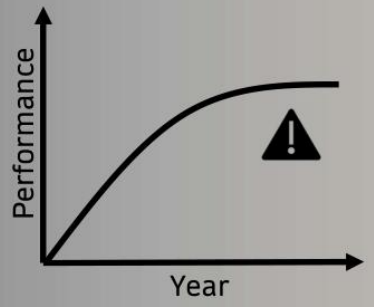


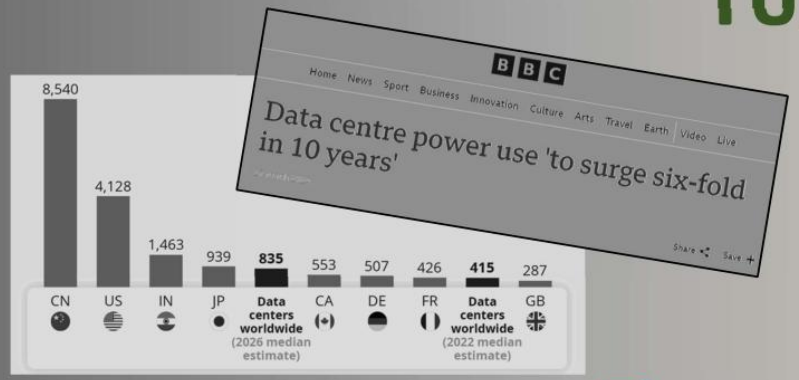


Towards Faster, Greener & ‘Cooler’ Tomorrow

10x Lower Power!

10x Faster!

Single Flux Quantum based systems



Best for data centres, servers & quantum systems

Cyber-Physical Computing Laboratory

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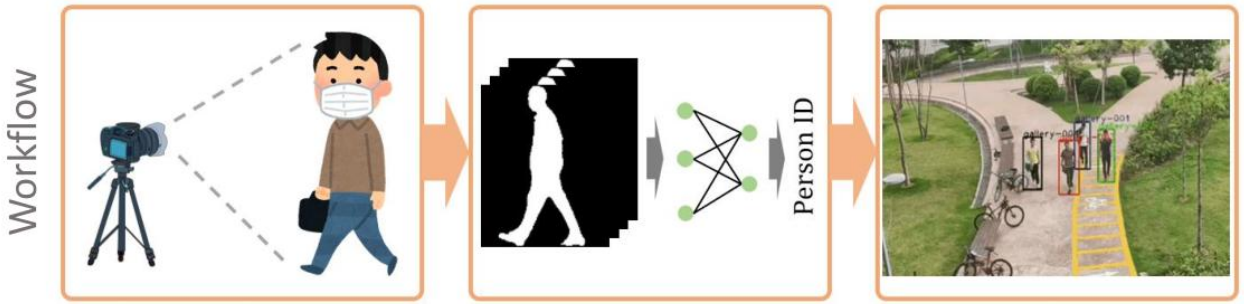
3D Gait Shape Upsampling using Diffusion Models for LiDAR-based Gait Recognition

KYUSHU UNIVERSITY

3MT THREE MINUTE THESIS FOUNDED BY THE UNIVERSITY OF QUEENSLAND

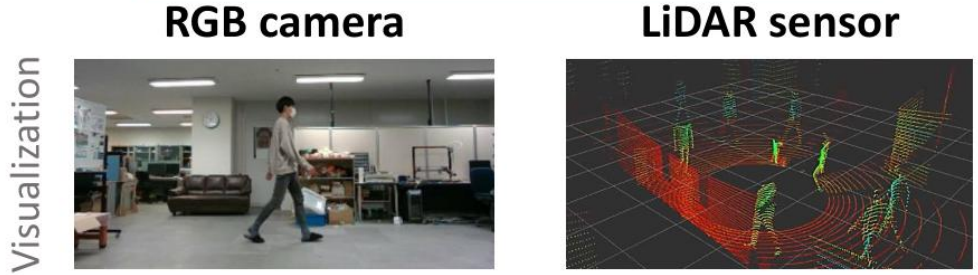
(1) What is gait recognition?

- Identifying people based on their **walking patterns**
- **Operates from a distance** without user's cooperation/contact



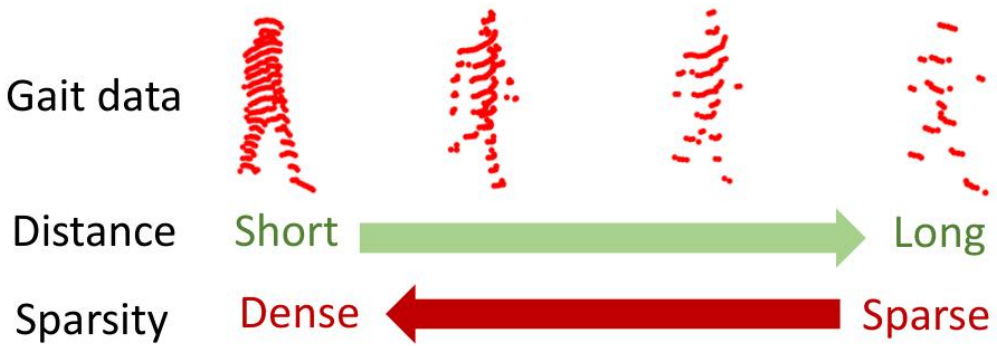
*Typical visual device is an **RGB camera***

(2) Why is a LiDAR sensor good at gait recognition?



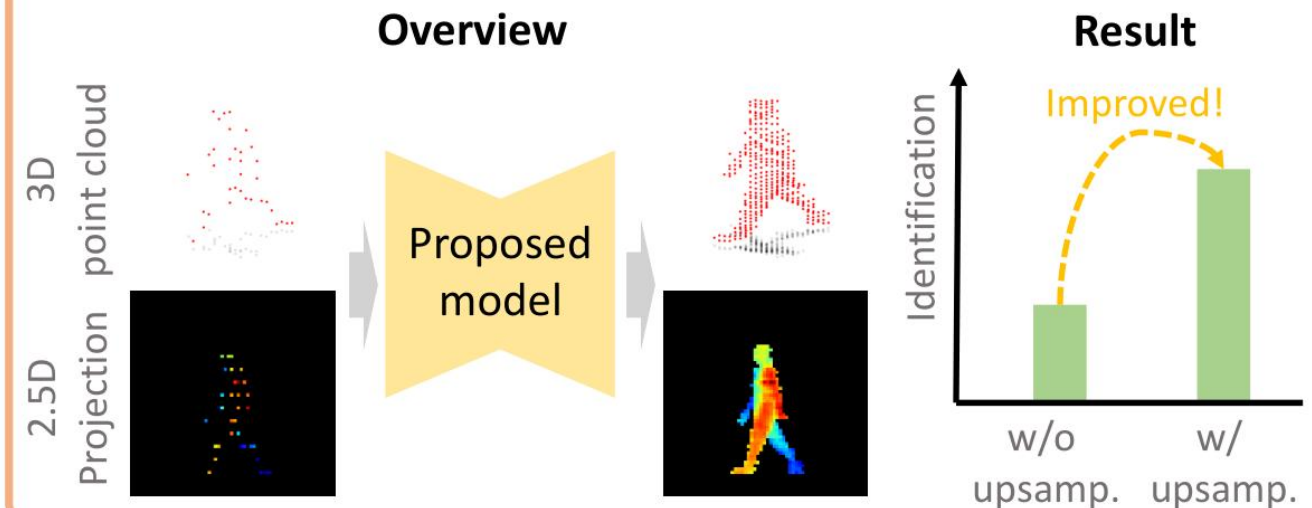
2D	Dimension	3D
Narrow	Field-of-View	Wide
Unstable	Illumination	Robust

(3) What is the weakness of the LiDAR sensor?



*Sparse gait data **reduces identification performance**!*

(4) Goal: Upsample to restore complete gait data



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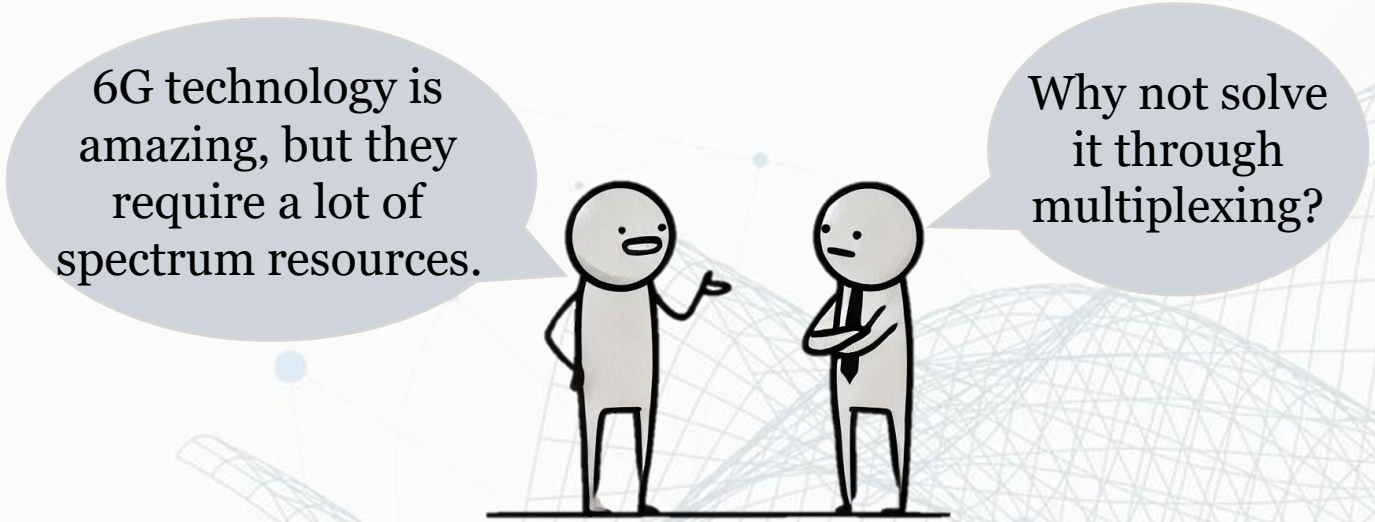
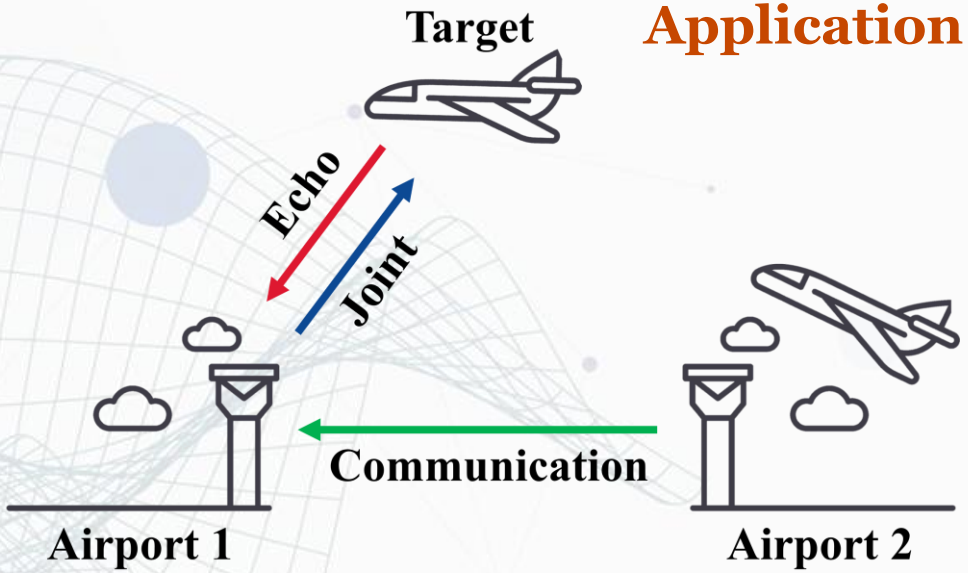
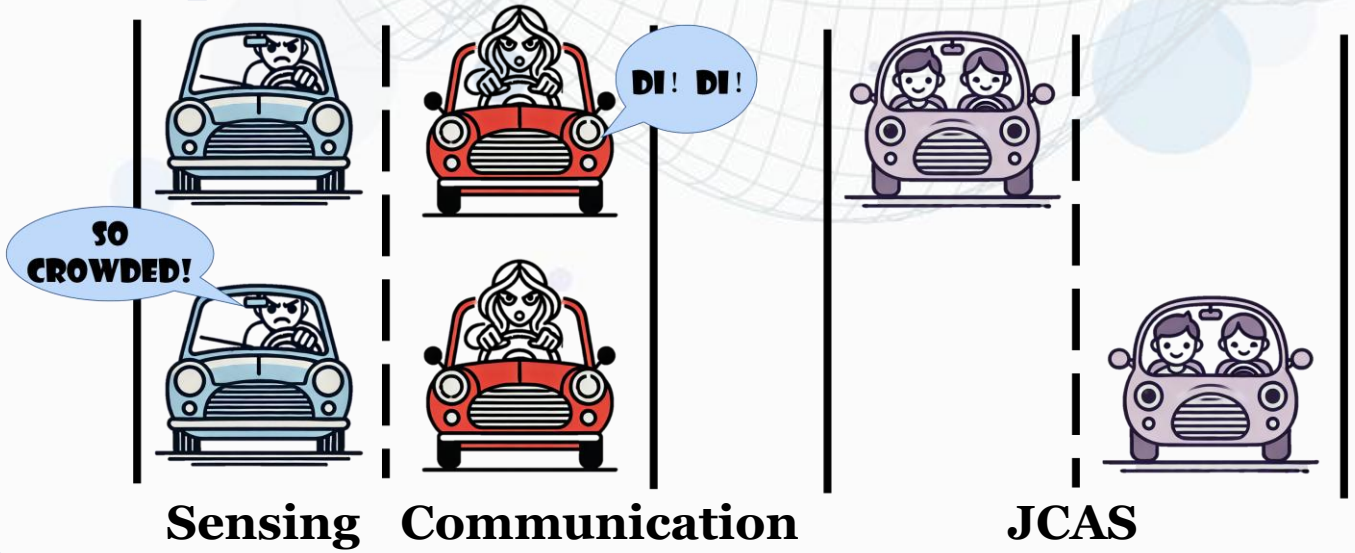
Joint Communication and Sensing (JCAS)



Application



Principle



JCAS not only integrates the sensing and communication together to save spectrum, but also improve both of their abilities!

JITSUMATSU LAB.

Want to know more? follow this lab!

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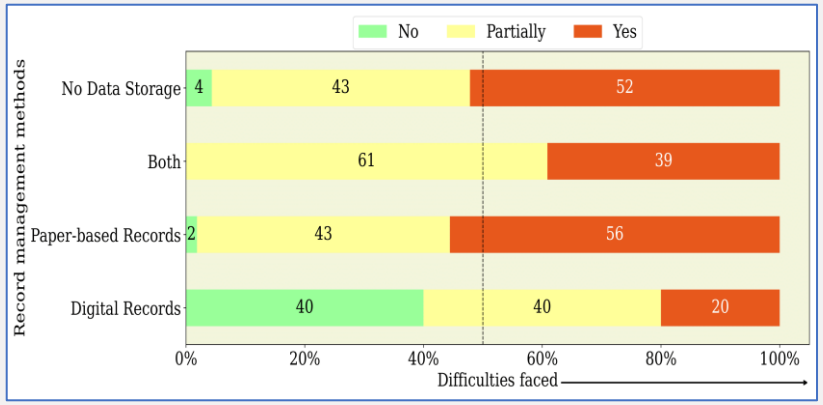
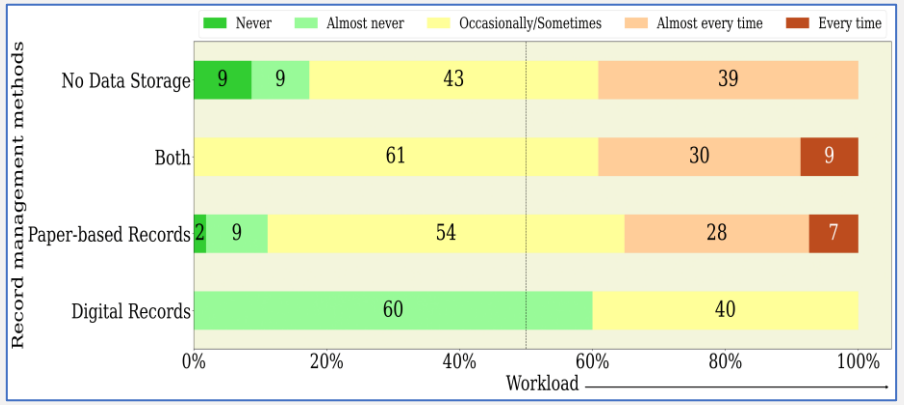
SOCIAL TECH LAB

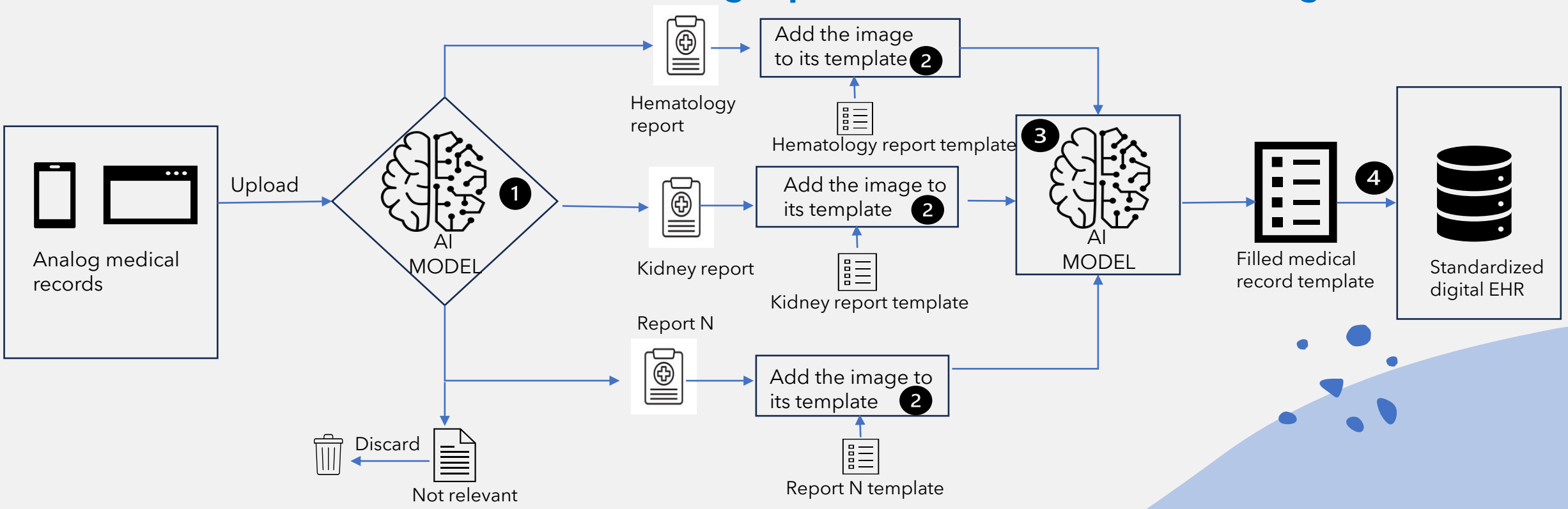
Clinical decision making



Workload



An AI driven solution for Transforming Paper-Based Medical Records into Digital Formats



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Beyond the Surface: Bridging Human Insights & AI in Education

Menna Fateen
Mine Laboratory

73%

Limit #1

Breakthrough?
Decline?

TOPP: Teacher Observations for Performance Prediction

Limit #2

Generic Feedback 🤔

RAG for Teacher-Aligned Formative Feedback

Time for Voting

Indoor Robot Localization with Wireless Distance Sensors	Tomoya Itsuka
Towards Faster, Greener & 'Cooler' Tomorrow	Pratiksha Mundhe
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Bridging Human Insight and AI in Education: Teacher Observations for Academic Performance Prediction and Retrieval-Augmented Assessment	Menatallah Fateen

URL for Vote

Please finish voting by 10:20 am.

ISEE 3MT

Award Celebration & Closing

from

Prof. Ryo Kurazume

ISEE 3MT

Awards

1st	
2nd	
3rd	