HONG KONG INNOHEALTH CUP

Online Seminar

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ORGANISED BY:















Content

- Introduction
- Important dates
- Project theme & Online Seminar
- Preliminary round: e-submission of poster
- Preliminary round: Project Showcase Expo
- Semi-final: Attachment Programme & final poster with 5-minute video
- Final: Final Presentation
- Prize





Introduction



Organised by:





Co-organised by:







The goal of the InnoHealth Cup is to inspire secondary school students in Hong Kong to cultivate empathy towards real-world health issues, utilise evidence-based research principles effectively, and harness their creative spirit to develop innovative health and biomedical technologies through research projects.



Introduction



Theme: "Al and Big Data for Health"

Tasks

Identify & address a health problem

Propose an innovative solution

Elaborate with action plan for the solution & implementation steps

Stage

Preliminary round: poster submission and Project Showcase Expo (all teams)

Semi-final: final poster with 5-minute Video (20 teams)

Final: live presentation (10 Teams)

Important dates



Date	Events
January 17 (Fri) – February 17 (Mon), 2025	Application period
Before February 21, 2025 (Fri)	Confirmation of successful application
February 22, 2025 (Sat)	Online Seminar
March 31, 2025 (Mon)	Deadline of e-submission of poster
April 12, 2025 (Sat)	Project Showcase Expo
April 17, 2025 (Thu)	Announcement of semi-finalists (20 Teams)
April 18 (Fri) – May 18 (Sun), 2025	Attachment Programme at HKUMed
June 6, 2025 (Fri)	E-submission deadline of final poster with 5-minute video
June 23, 2025 (Mon)	Announcement of finalists (10 Teams)
July 12, 2025 (Sat)	Final Presentation and Prize Presentation Ceremony

Project theme - "Al and Big Data for Health"



Participants are encouraged to:

- Identify real-world health-related problem and propose innovative solutions; or
- Conduct research projects at a manageable scale for school-level exploration; or
- Communicate scientific ideas using of AI and/ or big data.

Topic Examples:

Exploring health data from Hong Kong

Developing a mobile app to collect health data

Using AI to detect health misinformation on social media

Using AI and big data analysis for enhanced dietary insights





Medicine is a data-intensive discipline

REVIEW ARTICLE | FOCUS

https://doi.org/10.1038/s41591-018-0300-7

medicine

High-performance medicine: the convergence of human and artificial intelligence





FDA-authorized AI/ML-enabled medical devices





May 13, 2024 update: 191 Artificial Intelligence and Machine Learning (AI/ML)-Enabled Medical Devices were added to the list below. With this update, the FDA has authorized 882 AI/ML-enabled medical devices. Of those newly added to the list, 151 are devices with final decision dates between August 1, 2023, and March 31, 2024, and 40 are devices from prior periods identified through a further refinement of methods used to generate this list.

- 2	4	Α	В	С	D	E	F
1				Artificial Intelligence and Machin	e Learning (AI/ML)-Enable	d Medical Devices	FDA
2	. [Date of Fir 💌	Submis *	Device	Company	Panel (Lead)	Primary Product Cod
3	(03/29/2024	K233211	AVIEW CAC	Coreline Soft Co., Ltd.	Radiology	QIH
4	(03/28/2024	K233409	Eko Low Ejection Fraction Tool (ELEFT)	Eko Health, Inc.	Cardiovascular	QXO
5	(03/28/2024	K233657	NAEOTOM Alpha	Siemens Medical Solution	Radiology	JAK
6	(03/26/2024	K233650	SOMATOM go.Up; SOMATOM go.Now;	Siemens Medical Solution	Radiology	JAK
7	(03/22/2024	K232322	MAGNETOM Terra; MAGNETOM Terra.X	Siemens Medical Solution	Radiology	LNH
8	(03/22/2024	K232431	syngo.CT Brain Hemorrhage	Siemens Medical Solution	Radiology	QAS
9	0	03/22/2024	K240540	uMR Omega	Shanghai United Imaging	Radiology	LNH
10	0 0	03/21/2024	K233753	AI-Rad Companion (Pulmonary)	Siemens Healthcare Gmbl	- Radiology	JAK
11	1 (03/20/2024	K234047	Automatic Registration	Brainlab AG	Orthopedic	OLO
12	2 (03/15/2024	K233342	CINA-ASPECTS	Avicenna.AI	Radiology	POK
13	3 (03/13/2024	K233968	CINA-iPE	Avicenna.AI	Radiology	QAS
14	4 (03/11/2024	K232140	OTS Hip	Ortoma AB	Orthopedic	OLO
15	5 (03/08/2024	K233438	SleepStageML	Beacon Biosignals, Inc.	Neurology	OLZ
16	6 (03/06/2024	K231677	EdgeFlow UH10	Edgecare Inc.	Radiology	IYO
17	7 (03/04/2024	K233738	Overjet Caries Assist-Pediatric	Overjet, Inc	Radiology	MYN
18	8 (03/01/2024	K231690	iCAS-LV	HighRAD Ltd.	Radiology	QIH
19	9 (03/01/2024	K233030	BoneMRI	MRIguidance B.V	Radiology	QIH
20	0 0	02/29/2024	K231683	inHEART Models	inHEART, SAS	Radiology	QIH
21	1 (02/29/2024	K232765	MAGNETOM Cima.X Fit	Siemens Medical Solution	Radiology	LNH
22	2 (02/28/2024	K232613	CT Cardiomegaly	Innolitics, LLC	Radiology	QIH
23	3 (02/23/2024	K233590	Overjet Charting Assist	Overjet, Inc	Radiology	QIH
24	4 (02/22/2024	K233749	Revolution Ascend Sliding	GE Hangwei Medical Syste	Radiology	JAK
25	5 (02/21/2024	K232148	X-Guide Surgical Navigation System	X-Nav Technologies, LLC	Dental	QRY
26	6 (02/15/2024	K232915	EpiMonitor	Empatica Srl	Neurology	POS
27	7 (02/13/2024	K231855	QOCA image Smart RT Contouring Syste	Quanta Computer Inc.	Radiology	QKB
28	8 (02/13/2024	K233788	EPIQ Series Diagnostic Ultrasound Syste	Philips Ultrasound LLC	Radiology	IYN
29	9 (02/09/2024	K231355	Aurora	EnsoData	Anesthesiology	MNR
30	0 0	02/08/2024	K233080	HealthFLD	Nano-X AI Ltd.	Radiology	JAK
31	1 (02/05/2024	K232363	Viz HDS, Viz Volume Plus, Viz ICH+	Viz.ai, Inc.	Radiology	QIH
32	2 (01/31/2024	K231396	CEPHX- Cephalometric Analysis Softwa	Orca Dental AI LTD	Radiology	LLZ
33	3 (01/24/2024	K233195	Aplio i900, Aplio i800 and Aplio i700 So	f Canon Medical Systems Co	Radiology	IYN
34	4 (01/19/2024	K232156	Rapid ASPECTS (v3)	iSchemaView, Inc.	Radiology	POK
35	5 (01/18/2024	K232698	NemoScan	Software Nemotec S.L.	Radiology	QIH
36	6 0	01/17/2024	K231871	Radify Triage	Envisionit DeepAl Ltd	Radiology	QFM
37	7 (01/16/2024	K233512	Rapid (6.0)	iSchemaView, Inc.	Radiology	QIH
38	8 (01/13/2024	K233216	CLEWICU System	Clew Medical Ltd.	Cardiovascular	QNL

As of May 2024, US FDA has authorized 882 AI/ML enabled medical devices.

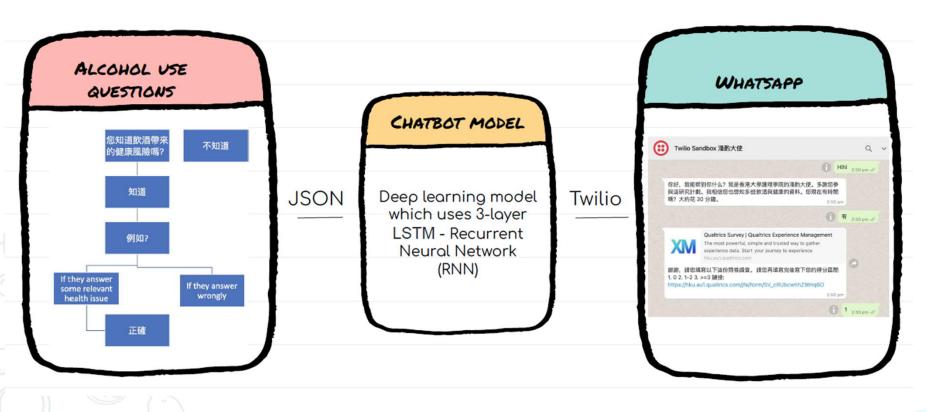
- Most in radiology
- Second in cardiology



https://www.fda.gov/medical-devices/software-medical-device-samd/artificial-intelligence-and-machine-learning-aiml-enabled-medical-devices

Al-enabled chatbot to support reduction of alcohol consumption











D24H

Laboratory of Data Discovery for Health 醫衞大數據深析實驗室 Collaboration with Professor Janet Wong (Metropolitan University of Hong Kong)

Smartphone-based pressure injury assessment

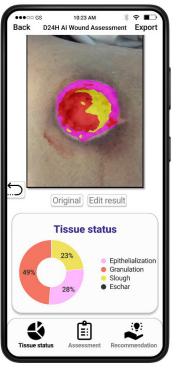




Wound summary



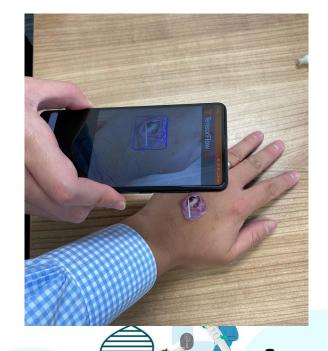
Assessment (Staging)



Tissue analysis







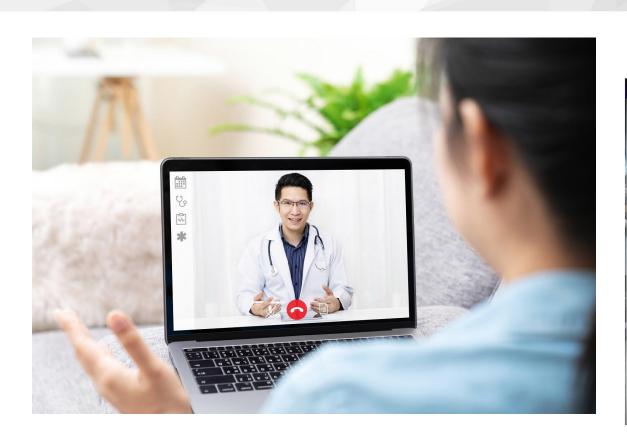


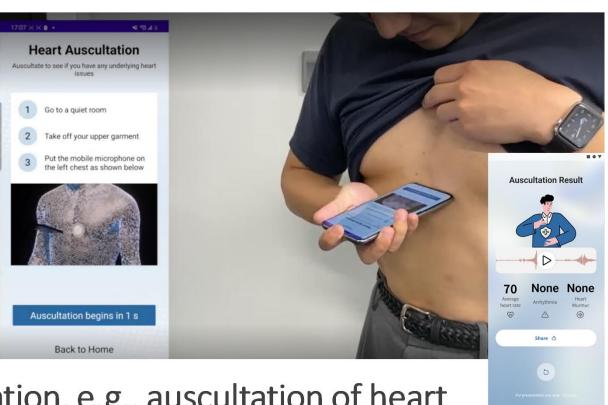


D24H Laboratory of Data Discovery for Health 醫衛大數據深析實驗室 Collaboration with Professor Janet Wong (Metropolitan University of Hong Kong)

Smartphone enabled auscultation for telemedicine



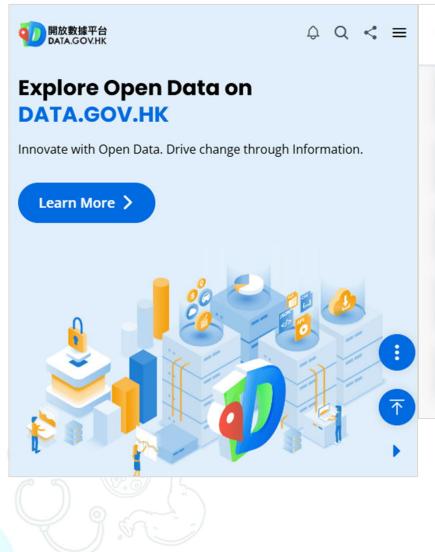


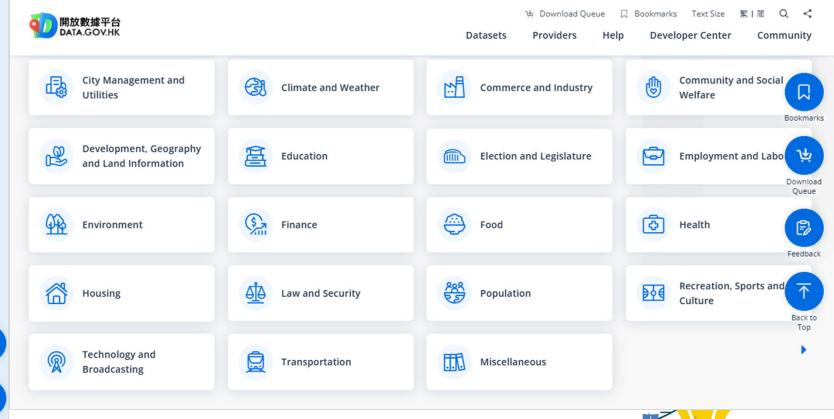


Doctors want to perform patient examination, e.g., auscultation of heart and lung. Currently impossible in telemedicine setting.

Resource: data.gov.hk







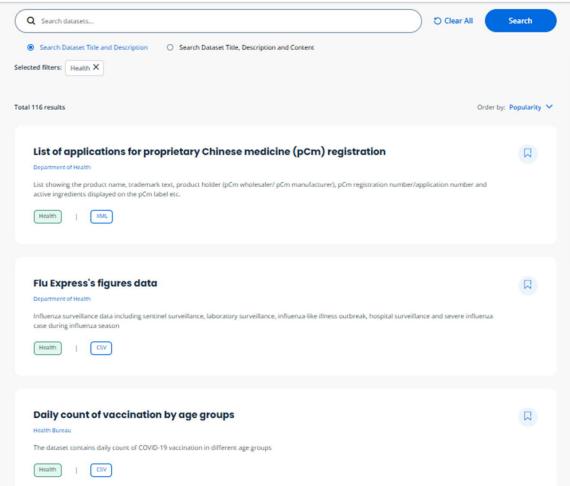
You can formulate hypothesis about

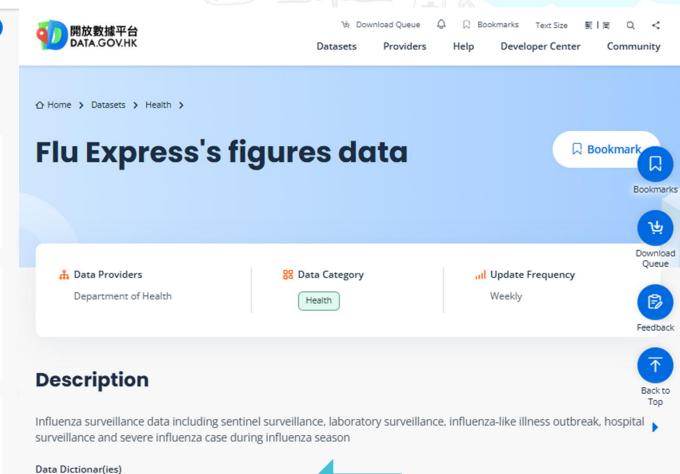
- Relationships between multiple variables, for example: correlation between rainfall and number of motor vehicle injury
- Trends over time, for example discover the seasonal trend of incidence of flu



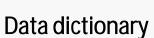








https://www.chp.gov.hk/files/pdf/flux_spec_en.pdf







	Δ	В		D	E F	G	Н	1	1 1	K	1	М	N	0	P				
1	Year	Week	From	То	ILI (ILI PMP		Н3 В		AandB		13 propo	Constitution of the Consti		ILI School ILI	750				
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2							111					0.0296		0					_
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4	2014	1 3	12-01-	14 18-01-1	.4 52.9	249	144	104	497	0.1079	0.0624	0.0451	0.2154	23	1				
5	2014	1 4	19-01-	14 25-01-1	4 50.6	305	169	127	601	0.1178	0.0653	0.0491	0.2321	16					
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0	2014			14 01-02-1			171	179	671	0.12	0.0639	0.0669	0.2507	100					
7	2014	6	02-02-	14 08-02-1	.4 59.5	394	177	202	773	0.1295	0.0582	0.0664	0.2541	0	4		Data dictionary of Flu Express		
8	2014	7	09-02-	14 15-02-1	.4 35.5	405	168	181	754	0.1565	0.0649	0.0699	0.2913	2			Column	Type	Description
9	2014		16-02-	14 22-02-1	4 47.2	431	206	267	904	0.1497	0.0716	0.0927	0.314	19	1(20.2	Year	Number	Year
10		-						10-17-5	22.0	2172012017006	230777407407	200000000000000000000000000000000000000			1	- I I	Week	Number	Week
10	2014	1 9	23-02-	14 01-03-1	.4 47.9	411	178	291	880	0.1426	0.0618	0.101	0.3053	28	-		From	Date (DD/MM/YYYY)	Start date of the week
11	2014	10	02-03-	14 08-03-1	4 37.5	229	131	291	651	0.091	0.0521	0.1157	0.2587	17	•	1	To	Date (DD/MM/YYYY)	End date of the week
12	2014	1 11	09-03-	14 15-03-1	4 55.3	122	78	288	488	0.0501	0.0321	0.1184	0.2006	11	:		ILI_GOPC	Number	Influenza-like illness consultation rate (per 1, general outpatient clinics
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13	2014	12	16-03-	14 22-03-1	.4 51.4	110	60	299	469	0.0431	0.0235	0.1171	0.1837	9			ICI_FIMI	Number	private medical practitioners
14	2014	13	23-03-	14 29-03-1	47.8	61	53	297	411	0.0241	0.0209	0.1173	0.1623	7	4		H1	Number	Number of positive detections of influenza A
15	2014	14	30-03-	14 05-04-1	4 45.2	46	40	189	275	0.021	0.0183	0.0865	0.1258	3	(Н3	Number	Number of positive detections of influenza A
16				14 12-04-1		1.5			1000000	A CONTRACTOR OF THE PARTY OF TH	0.0208	0.0768	0.1125	7		_	В	Number	Number of positive detections of influenza B
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17	2014	16	13-04-	14 19-04-1	43.8	26	21	161	208	0.0113	0.0091	0.0697	0.0901	0	1		H1_proportion	Number	Proportion of influenza A(H1) virus among al
18	2014	17	20-04-	14 26-04-1	4 50.8	7	19	149	175	0.003	0.0083	0.0649	0.0762	0	1	2	H3_proportion B proportion	Number Number	Proportion of influenza A(H3) virus among all Proportion of influenza B virus among all res
19	2014	1 10	27.04	14 03-05-1	4 38.8	6	25	117	148	0.0027	0.0114	0.0534	0.0675	1			AandB_proportion	Number	Proportion of all influenza A and B viruses an
200				mail in a line ii -			1000		100000	200000000000000000000000000000000000000	100000000000000000000000000000000000000	100000000000000000000000000000000000000	IDEACH REALLY				ILI School	Number	Number of influenza-like illness outbreaks in
20	2014	19	04-05-	14 10-05-1	41.8	2	29	63	94	0.001	0.015	0.0326	0.0486	2					centre/kindergarten, primary school and sec
21	2014	20	11-05-	14 17-05-1	4 33.3	14	11	58	83	0.0073	0.0057	0.0302	0.0433	1	1		ILI_NonSchool	Number	Number of influenza-like illness outbreaks in
22	2014	21	18-05-	14 24-05-1	4 42.3	6	38	61	105	0.003	0.0193	0.0309	0.0532	6	- (Adm_0_5	Number	Admission rate in public hospitals with princi
		-				-								-			Adm 6 11	Number	10,000 people in the age group) - 0-5 years Admission rate in public hospitals with princi
23	2014	22	25-05-	14 31-05-1	.4 49.9		80	54	140	0.0029	0.0388	0.0262	0.0679	8			Adm_6_11	Number	10,000 people in the age group) - 6-11 years
24	2014	23	01-06-	14 07-06-1	.4 56.5	12	118	80	210	0.0056	0.0553	0.0375	0.0985	1	1		Adm 12 17	Number	Admission rate in public hospitals with princi
25	2014	24	08-06-	14 14-06-1	4 46.4	12	191	64	267	0.0055	0.0875	0.0293	0.1223	3				Annenement	10,000 people in the age group) - 12-17 year.
1000000									100000000					4			Adm_18_49	Number	Admission rate in public hospitals with princi
26	2014			14 21-06-1		-	162	60	227	0.0024	0.0791	0.0293	0.1108						10,000 people in the age group) - 18-49 year
27	2014	26	22-06-	14 28-06-1	41.7	2	143	34	179	0.0011	0.0784	0.0186	0.0981	2	4		Adm_50_64	Number	Admission rate in public hospitals with princi 10,000 people in the age group) - 50-64 year
28	2014	27	29-06-	14 05-07-1	.4 32.3	3	171	14	188	0.0016	0.0916	0.0075	0.1007	1	:				10,000 people in the age group) - 50-64 year
		_				_	4.50		***	0.000	0.0000	0.0007	0.000	_				/	
- /																			

Downloaded data file

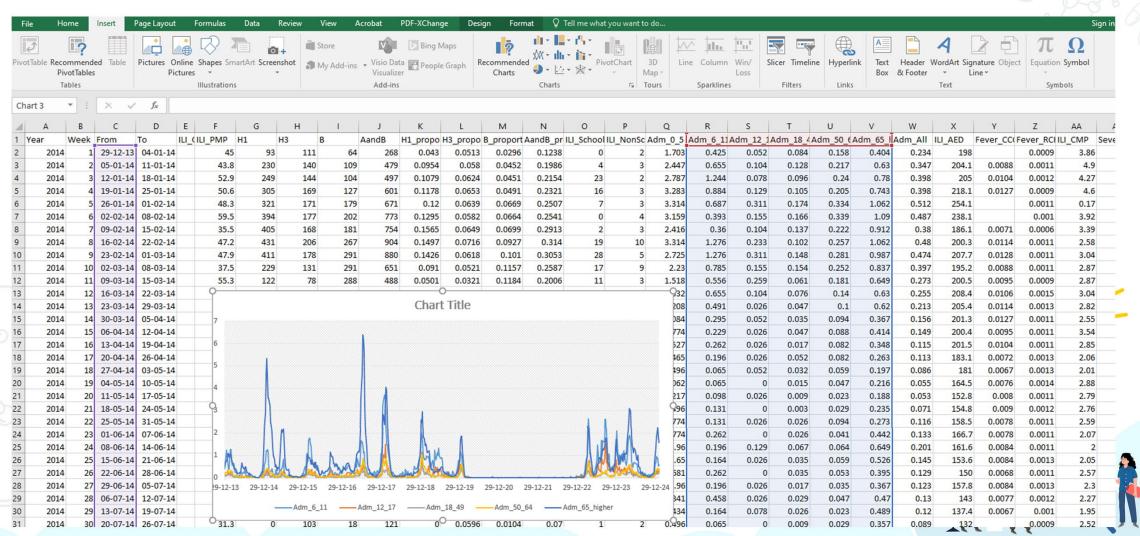
Data dictionary



Data analysis: MS excel

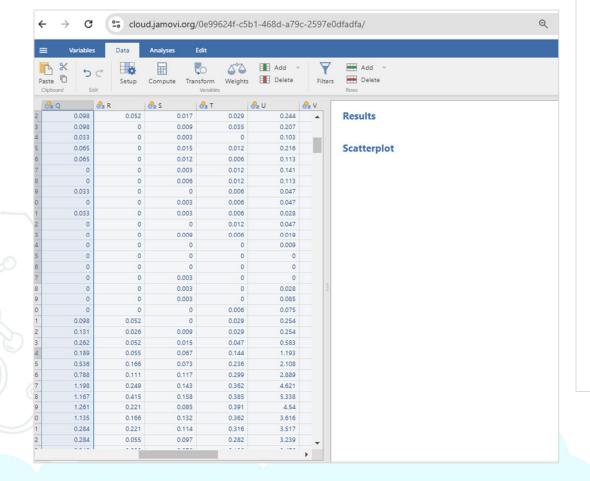
- Select the data you need
- May need to make additional variables
- Always think about your medical/health research problem



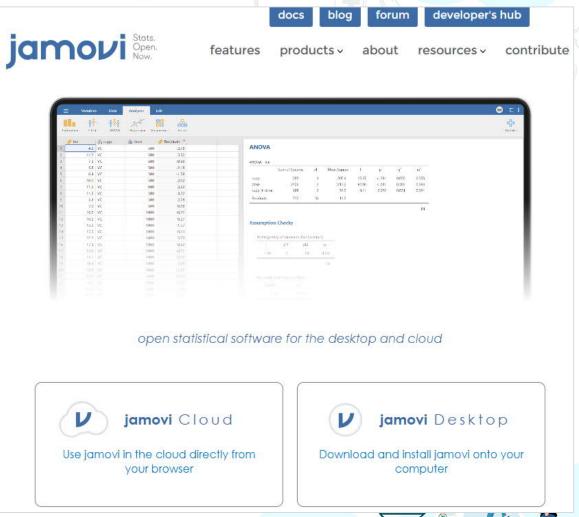


More data analysis

JAMOVI (https://www.jamovi.org/)





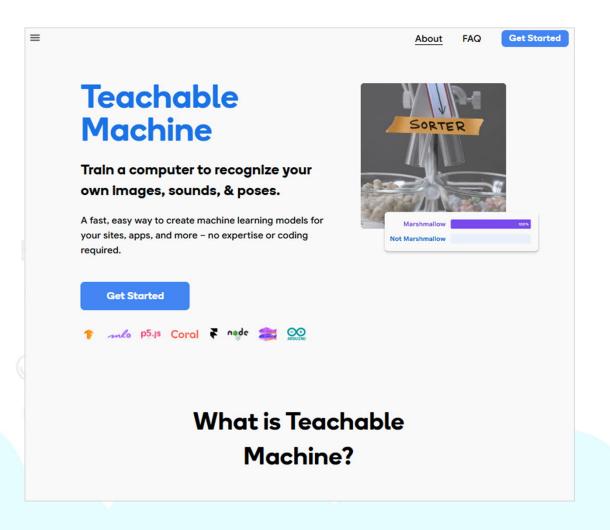


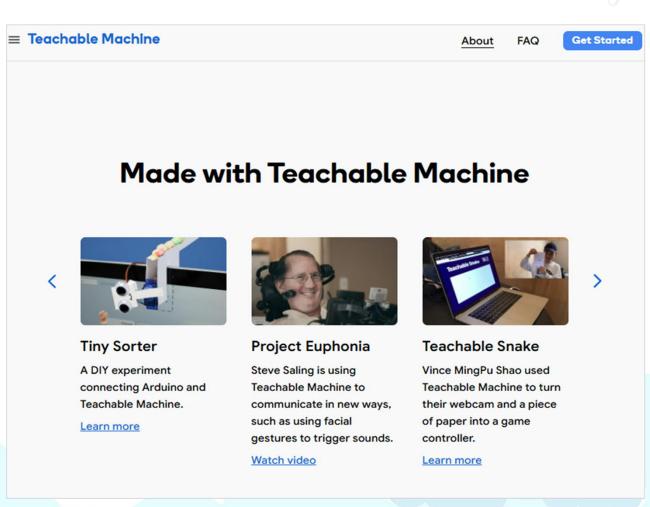


Al model creation with Teachable Machine



https://teachablemachine.withgoogle.com/





New Project

⚠ Open an existing project from Drive.

Open an existing project from a file.

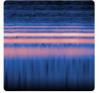






Image Project

Teach based on images, from files or your webcam.







Audio Project

Teach based on one-second-long sounds, from files or your microphone.



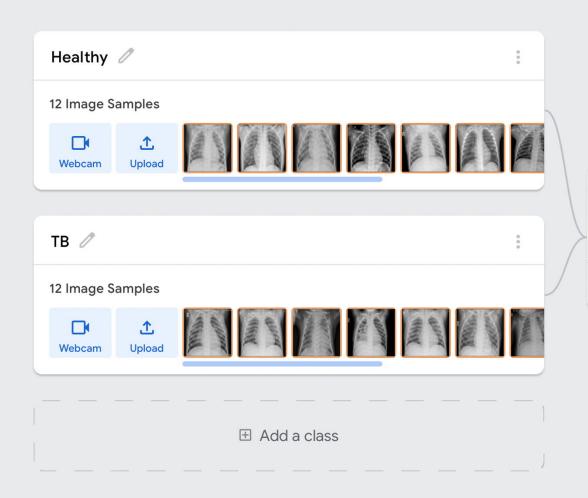




Pose Project

Teach based on images, from files or your webcam.

■ Teachable Machine





Training

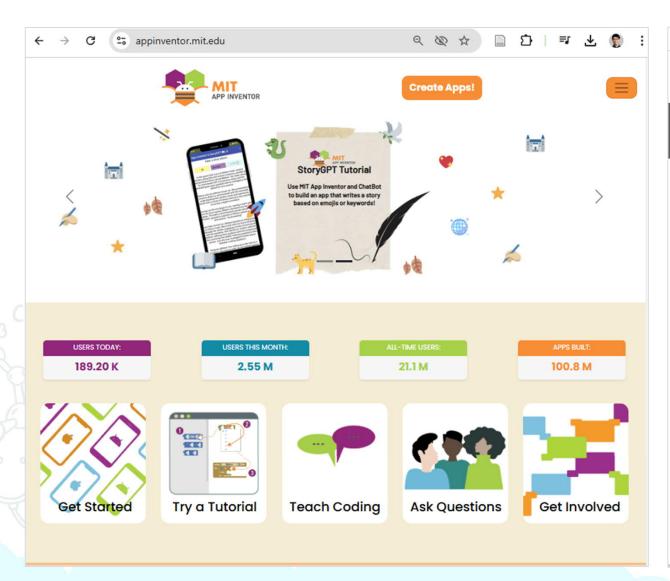
Advanced

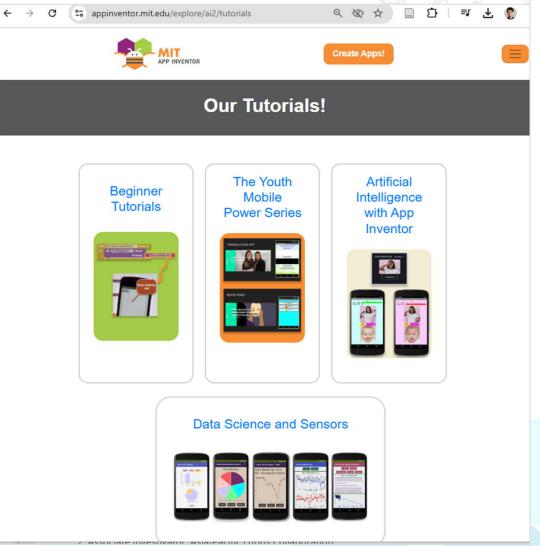
Model Trained



App creation using MIT App Inventor





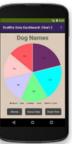






Data Science and Sensors









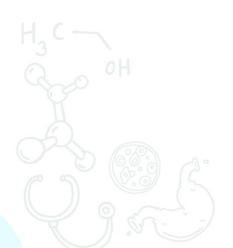


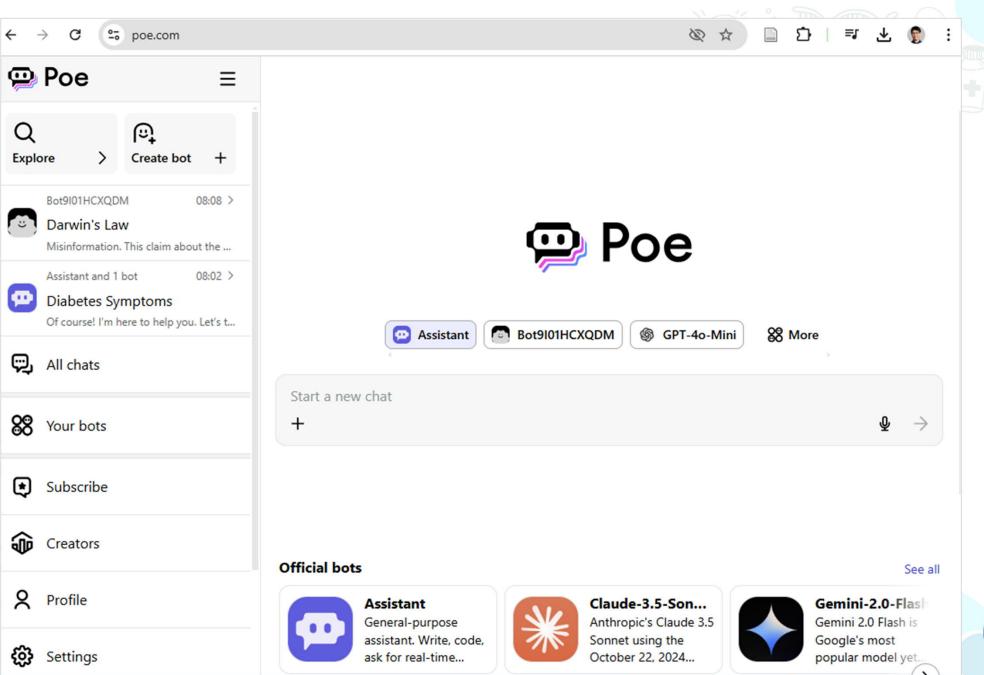
Create apps for surveys, collecting sensor data, and analyzing spreadsheet data.

- 4	Module Name	Topic	Target Grades	
	Data Using Bar Graphs and Pie Charts	Survey Data	Grades 7-12	
	EcoBits Explorers: Environmental Data Collection and Analysis using Micro:bits	Visualizing Sensor Data	Grades 7-12	
CO C	IceMelt: Modeling and Predicting Climate Change	Visualizing and Modeling Spreadsheet Data	Grades 9-12	





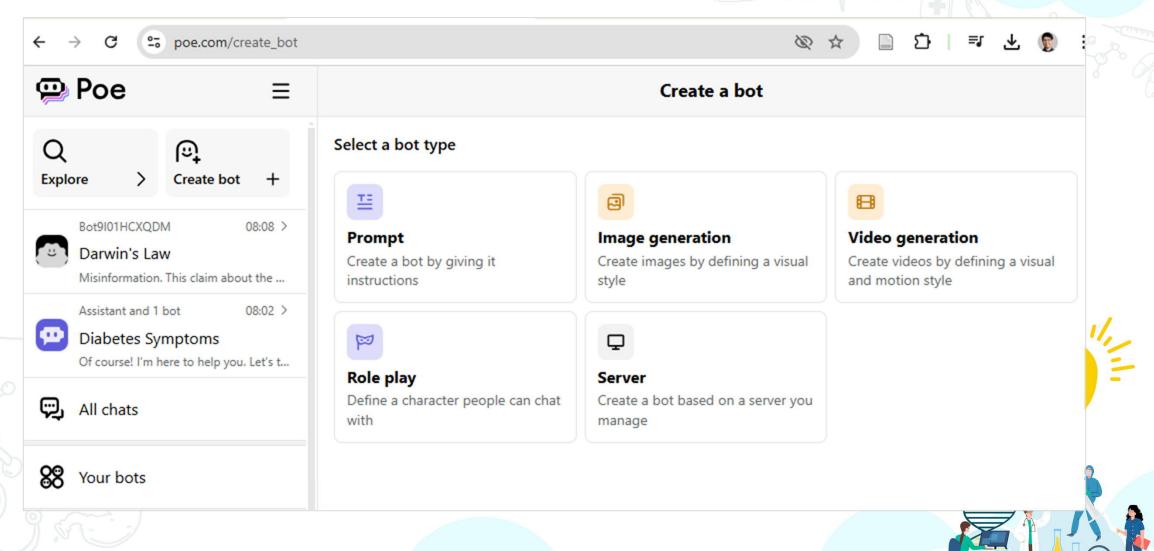




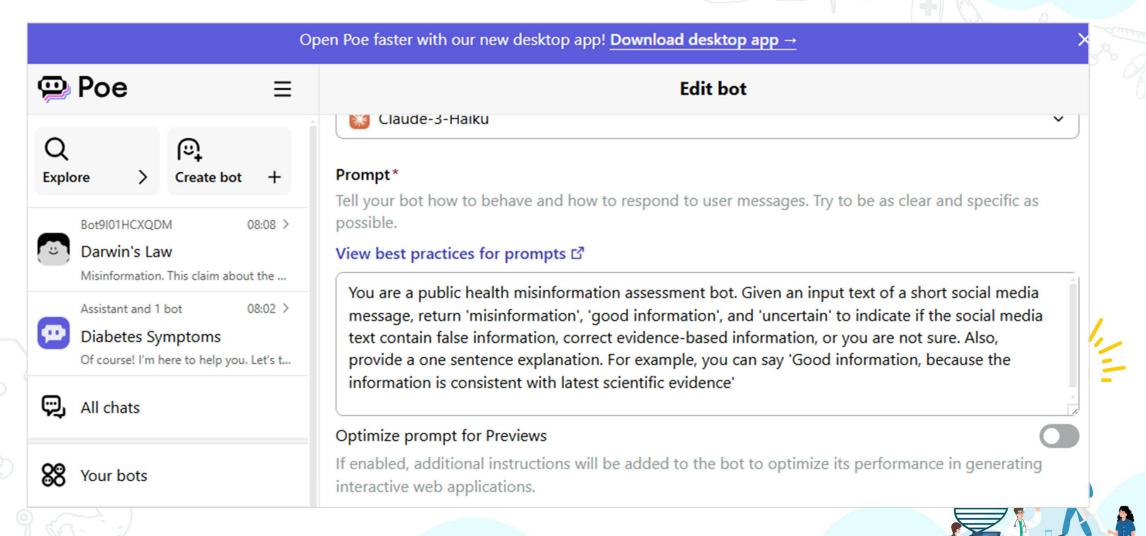
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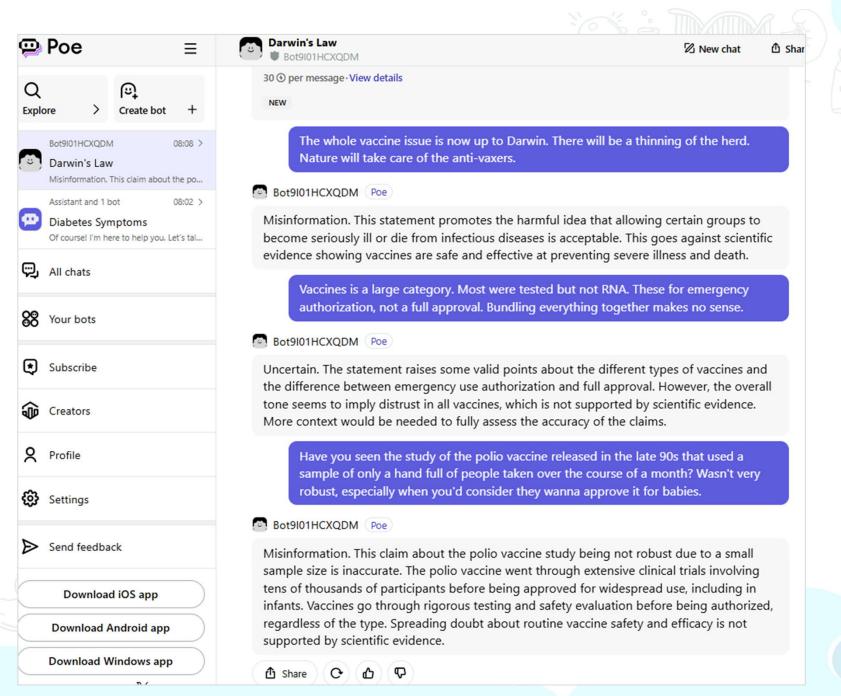
















Preliminary round: e-submission of poster

E-Submission Deadline	On or before March 31, 2025 (Mon) (Submission Link will be provided in due course)
Medium of Presentation	English
Orientation	Portrait
Size	A0 (max 84.1 cm width, 118.9 cm height) Body of text should have a min. 24 pt font
Submission Format	PDF
Suggested Design Tool	Canva, PowerPoint, Adobe Photoshop, or Adobe Illustrator

Teams must print and bring their own hard-copy poster (size A0) at the Project Showcase Expo on April 12, 2025 (Sat).

Poster Sample

Project Title
Team Code & Students' Names
Team Name (included School Name)

- Abstract
- Introduction / problem description /
- Innovative concepts
- Content:
 - Method / solutions / scientific ideas
 - o Expected result / findings / action plan
 - o Implementation steps
 - o Conclusion
- Reference
- Team members contribution



Preliminary round: Project Showcase Expo - overview

Date	April 12, 2025 (Sat)
Time	 10:30am - 5:30pm 10:30am Registration & set-up 1:30pm Opening ceremony 2:30pm Project Showcase Expo
Venue	William M W Mong Block, 21 Sassoon Road, Pokfulam
Attire	School uniform/smart casual





Preliminary Round: Project Showcase Expo - guidelines



Team registration

- The presence of the teacher-in-charge at the event is mandatory. In case the registered teacher-in-charge is not available on that day, please provide the name and contact of another on-site representative.
- Teams must arrive during the team registration period and register with their own student card or HKID.

Set up

- Materials will be provided for attaching the poster to the panel. It is recommended that teams bring any additional stationery/ materials they may require.
- Teams must ensure that their poster is set up before the opening ceremony begins. The poster can only be removed after the Project Showcase Expo at 5:30pm.

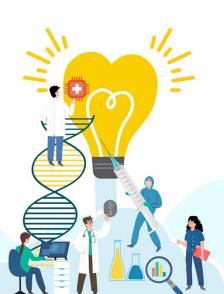


Preliminary round: Project Showcase Expo - guidelines (Con't)



Presentation

- 2 Adjudicators will grade each presentation and poster using the scoring rubric.
- Each team will have 3 mins for presentation and 2 mins for Q&A. Please strictly adhere to the allocated time.
- Teams are expected to stand next to their posters during their entire allocated time slot to present their work and to address any questions from adjudicators and participants.
- Teams are welcome to use either Cantonese or English during their presentation and Q&A session.
- Teams are encouraged to stay beyond the allocated time slot for public vote awards.



Project Showcase Expo - assessment criteria



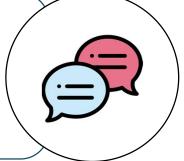
Content



Impact & novelty



Presentation



Layout/ design, organization & figures



Penalties will be applied for the following:

- a) Absence of team member(s) during the presentation session;
- b) Failure to have an A0 size hard copy poster for display; and
- c) Significant discrepancy between the submitted e-poster and the actual poster presented in the Project Showcase Expo.

Preliminary round: Project Showcase Expo - public vote awards, school awards & semi-finalists



Public vote awards & school awards

		Public vote awards		School awards
	Best Creative Concept Award	Outstanding Visual Design Award	Excellence in Information Clarity Award	Best School Participation Award
Champion, first runner-up, second runner-up	✓	✓	✓	✓
Team/ School trophy	✓	✓	✓	✓
Personal certificate	✓	✓	✓	\1

- Results of the awards will be announced online and via email after the Project Showcase Expo
- Trophies and personal certificates will be awarded during the Prize Presentation Ceremony on July 12, 2025 (Sat)

Semi-finalists

The 20 Teams with highest scores during the preliminary round will be shortlisted as semi-finalists

Result will be announced via email



Semi-final: Attachment Programme

HONG KONG
INNOHEALTH
GUP

- Pair up with HKUMed academic staff to provide consultation sessions
- Email contact and available meeting timeslots of academic staff will be sent to teacher-in-charge
- Duration: April 18 (Fri) May 18 (Sun), 2025
- Recommended coaching schedule:

Time	Meeting	
Week of April 21, 2025	1 st face to face / zoom meeting Consultation on implementation / project direction Discussion on improvement areas	\\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\
Week of May 12, 2025	2 nd face to face / zoom meeting Review on updates Technical support on project implementation Discussion on improvement areas	
Other dates (optional)	Subject to communication between advisors and project teams' agreement Format can be by email or zoom, etc.	
T STEEL		

Semi-final: e-submission of final poster with 5-minute video



E-Submission Deadline	On or before June 6, 2025 (Fri) (Submission link will be provided in due course)	0
Medium of Speech/ Presentation	English	
Final Poster	 A0 size poster in PDF format Same poster as previous one Only addressing any specific feedback provided by HKUMed academic staff regarding content or important aspects 	
Video Format & Content	 Downloadable link with 5-minute MP4/ MOV video uploaded Clearly state the research objectives and what the project aims to achieve Explain the methodology used in the research, including data collection methods and analysis techniques Discuss the feasibility of the proposed solutions and outline any future plans 	
Assessment Criteria	Content Impact & novelty Video design & quality	•
Finalists	 The 10 Teams with highest scores during the semi-final round will be shortlisted as finalists Result will be announced via email 	

Final: Final Presentation



Date	July 12, 2025 (Sat)	\$ 0°
Time	10:00am - 12:30pm • 10:00am Final Presentation	
	11:30am Prize Presentation Ceremony	
Venue	Medical Campus, 21 Sassoon Road, Pokfulam	
Medium of Speech/ Presentation	English	
Final Presentation	 5-minute presentation and a 5-minute Q&A session Same content as the 5-minute Video Well-prepared for the Q&A session, able to respond with facts and logic 	
Assessment Criteria	Content Impact & novelty Layout/ design, organization & figures Presentation Q&A quality	
Winners	Champion, first runner-up and second runner-up	
		Men - An

Prize



Achievement	Prize
	 Team trophy cup HKUMed goody bags Certificate for all team members
Champion First runner-up Second runner-up	 Complimentary enrollment in ONE of the following HKUMed Summer Programmes: Summer Immersion Programme (for S4/G10/Y11 students only) July 21 – 25, 2025 HKUMed x QMH Summer Attachment Programme (for S5/G11/Y12 students only) Round 1: July 28 (Mon) – August 1 (Fri), 2025; OR Round 2: August 4-8, 2025; OR Round 3: August 11-15, 2025
Finalists	Merit plaque
Public vote team awards	 Certificate for all team members Team trophy
Public vote school awards	School trophy
Other contestants	 Personal certificate upon their participation in poster submission and Project Showcase Expo Marked with highest achievement in the competition To be distributed to school representatives on July 12, 2025 (Sat)