

A large, dark dragon with long, thin wings stands on a rocky outcrop. A small figure of a person stands next to the dragon, reaching out to touch its nose. The scene is set against a dramatic, cloudy sky.

How to Train Your Dragon:

The Use of AI in Medical Education

DREAMWORKS
HOW TO TRAIN YOUR
DRAGON

OFFICIAL TEASER



The Challenge

- - Medical education is increasingly demanding and fragmented
- - Clinicians and educators are overwhelmed by admin, content delivery, and new technologies
- - Can AI help us train better, faster, smarter?
- - Think of AI as a powerful dragon—potentially chaotic unless well-trained

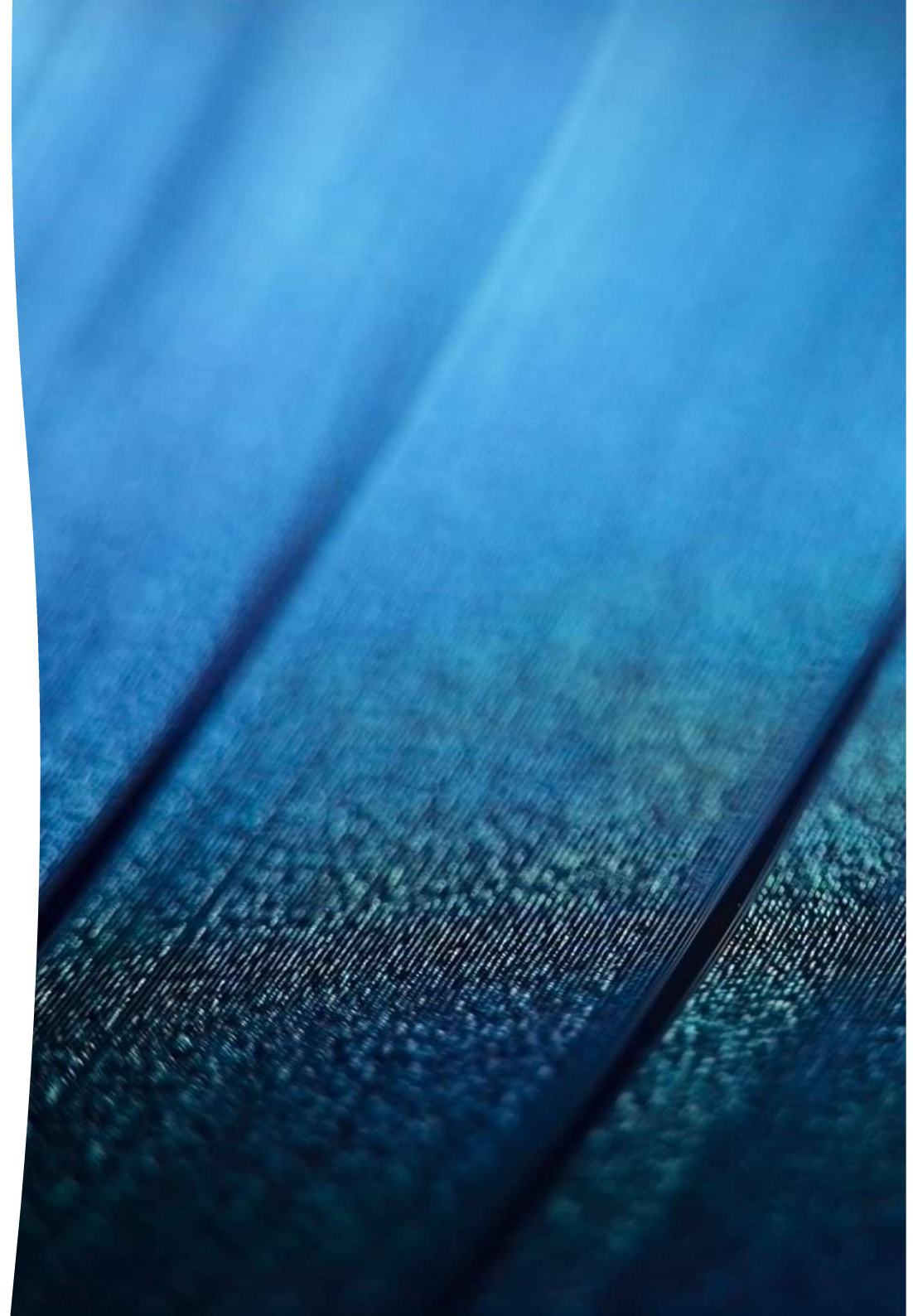
Why AI, Why Now?

- Rapid evolution of AI tools in education and healthcare

- ChatGPT, image generators, virtual simulations, and more

- Students already use AI—educators must catch up

- Opportunity to revolutionise learning and teaching





Meet Your Dragon: What is AI?

- - Artificial Intelligence is software that mimics human thinking
- - Includes Machine Learning, LLMs (like ChatGPT), image generators
- - Think of it as a dragon: powerful but needs training

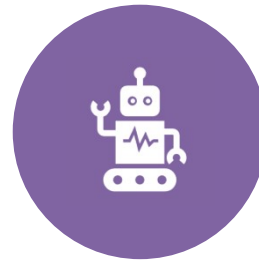
Types of AI in Medical Education



- LANGUAGE MODELS
(CHATGPT, CLAUDE)



- IMAGE GENERATORS
(DALL-E, MIDJOURNEY)



- VIRTUAL
SIMULATIONS (BODY
INTERACT, SIMX)



- VOICE-TO-TEXT &
TRANSLATION
(WHISPER, DEEPL)

AI as Helper, Tutor, or Mentor

- - AI can act as a scribe, tutor, simulator, content creator
- - Adaptable: from writing MCQs to creating case-based scenarios

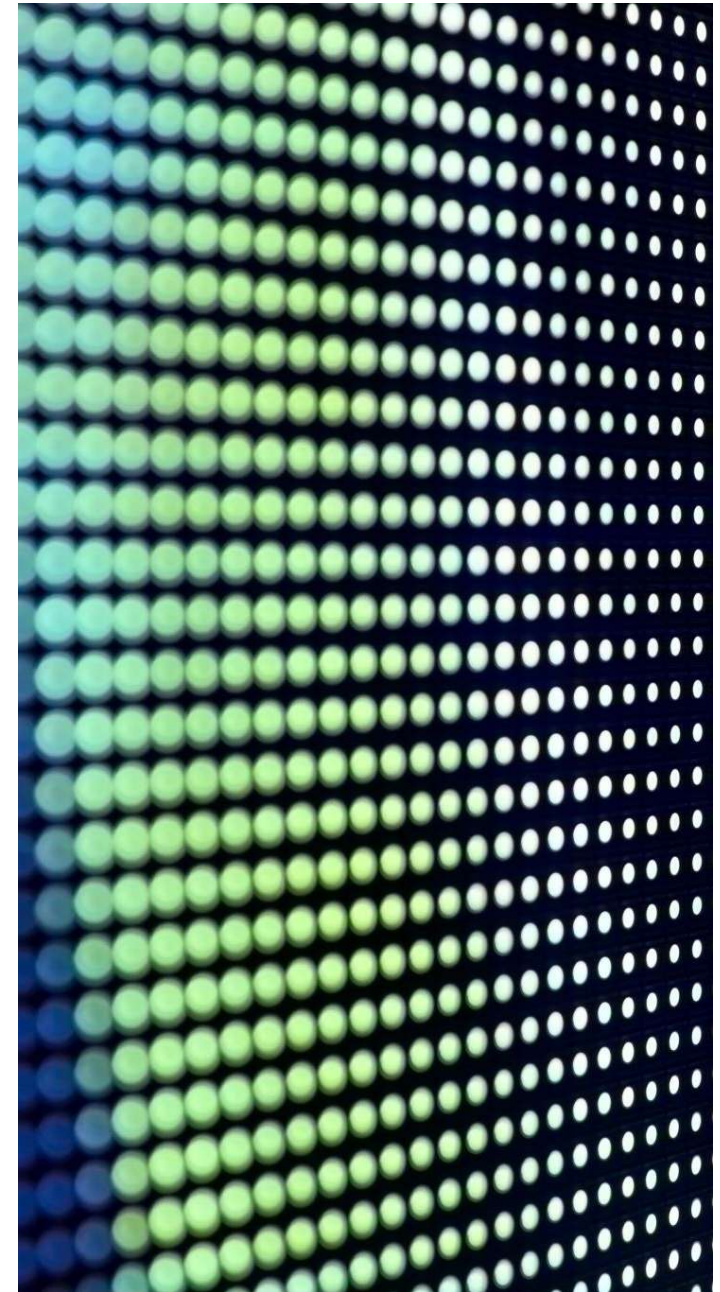


Personalised Learning Paths

- Adaptive tools
adjust pace and
content

- Useful in CPD
and student
education

- Simulated
emergencies
tailored to user
performance



Content Creation with AI

- - Lecture slides, quizzes, OSCE cases, patient dialogues
- - Saves faculty time
- - Ensures consistency



Standardised Patients & Virtual Reality

- - Simulated ethical dilemmas and OSCE stations
- - AI avatars with dynamic dialogue
- - Examples: SimX, Body Interact

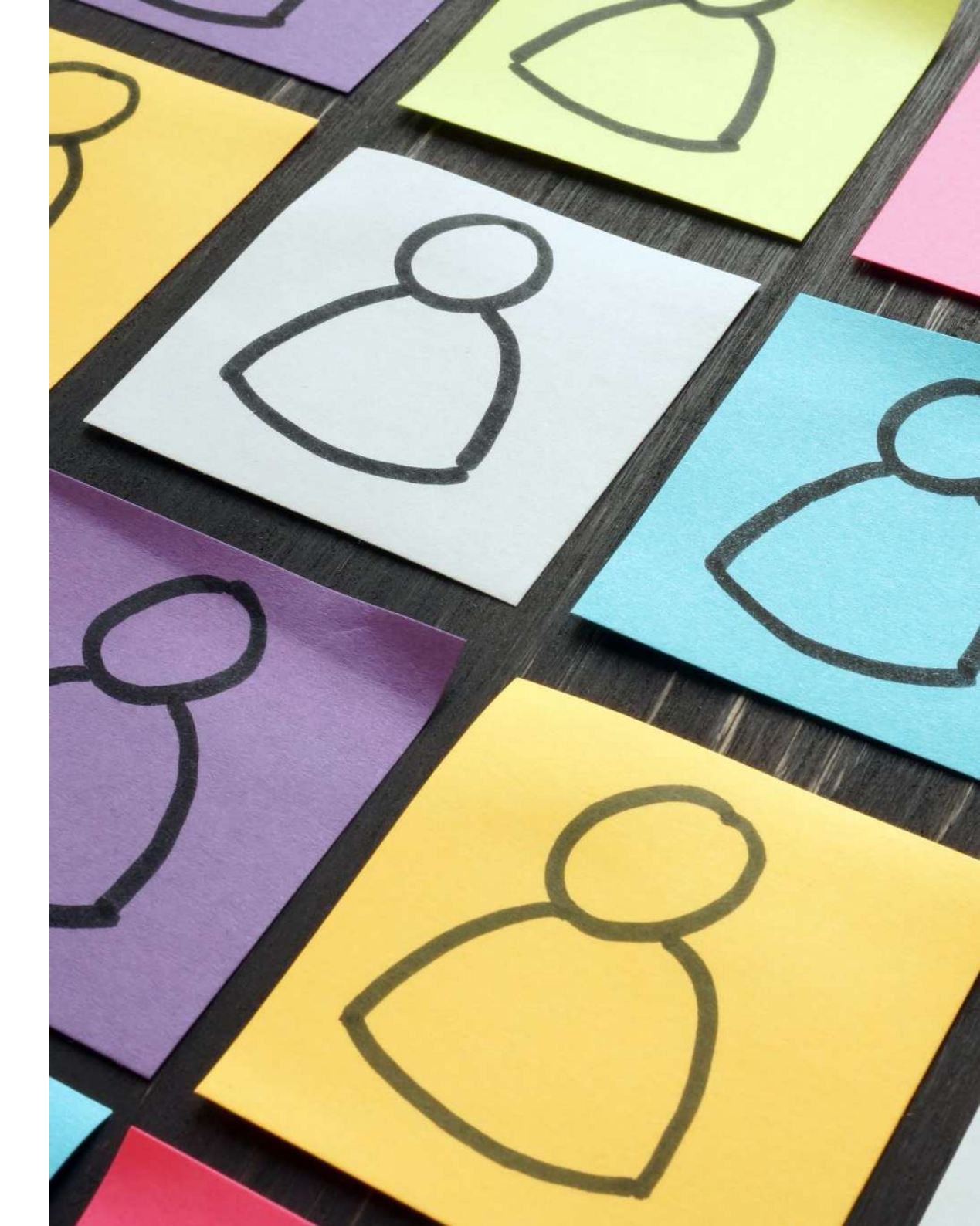


Clinical Decision Simulators

- Paediatric emergency scenarios

- Real-time feedback on choices

- Encourages critical thinking



Assessment and Feedback

- - AI grades essays, MCQs, and gives instant feedback
- - Natural Language Processing enables reflective analysis
- - Personalised feedback = better outcomes

Faculty Productivity Tools

- GENERATE POLICIES,
GUIDES, MARKING RUBRICS,
PATIENT HANDOUTS

- TRANSCRIBE WARD
ROUNDS

- CHATGPT, GRAMMARLY,
NOTION





Example Slide

- Prompt: 'Create a paediatric asthma OSCE case with marking rubric'

<https://chat.openai.com>
or
<https://www.phind.com>



Paediatric OSCE case

- Here's a complete paediatric asthma OSCE case with a detailed marking rubric. It's designed for a 5–8 minute station focusing on clinical reasoning, communication, and management.
-  Paediatric Asthma OSCE Case Station
 - Title: Acute Asthma in a 7-Year-Old Child
 - Duration: 5–8 minutes
 - Setting: Emergency Department
-  Candidate Instructions (on the door) You are a doctor working in the emergency department. A 7-year-old child, Sipho, is brought in by his mother with difficulty breathing. Please:
 - Take a focused history from the mother
 - Explain your likely diagnosis
 - Describe your initial management plan

Simulated patient information (Mother)

- Siphso is a 7-year-old boy with a 3-day history of coughing, worsening shortness of breath, and wheezing.
- He has a known diagnosis of asthma.
- Uses salbutamol inhaler occasionally.
- No controller (e.g. steroid) medication.
- No fever, no vomiting.
- Breathing worsened this morning.
- He is alert but breathless and wheezy.
- Past hospital admission 6 months ago for similar symptoms.

Mother is anxious and wants to know:

- What is happening to her child?
- Will he need to be admitted?

Marking Rubric

Domain	Criteria	Marks
1. History Taking	Asks about onset, duration, triggers, previous episodes	2
	Inquires about medication use, compliance, inhaler technique	2
	Asks about associated symptoms (fever, vomiting, feeding)	1
	Asks about previous hospitalizations or ICU admissions	1
2. Diagnosis & Explanation	Identifies this as an acute asthma exacerbation	2
	Explains pathophysiology in simple terms	2
	Provides reassurance to mother	1
3. Management Plan	Plans salbutamol via spacer +/- oxygen if needed	2
	Adds oral steroid (e.g. prednisolone) appropriately	2
	Mentions monitoring (RR, SpO ₂ , response)	1
	Advises on admission vs discharge based on severity	1
4. Communication & Structure	Communicates clearly and respectfully	1
	Organised, logical approach to consultation	1

Instructions to Examiners

- Accept mild variations in medication names (e.g., ventolin/salbutamol).
- Mark generously if management reflects current clinical guidelines.
- Expect at least *basic safety-netting* advice if discharge is considered.

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Glass.Health

*26 -week -old preterm infant delivered by NVD.
Birth weight 750 grams. Mother did not attend
antenatal care.*

*Maternal UTI. Apgar scores 5/10 at one
minute, 7/10 at five minutes.*

*On examination, marked sternal and
intercostal recession, grunting. Oxygen
saturation 86%*

I need more information about what specific
assistance you're looking for with this preterm
infant case.

Are you seeking help with:

1. Initial resuscitation and stabilization?
2. NICU admission orders?
3. Respiratory management options?
4. Risk assessment for complications?
5. Something else specific to this case?

Please clarify your question so I can provide
the most helpful response for your clinical
needs.

Connect EHR

Initial resuscitation and stabilization

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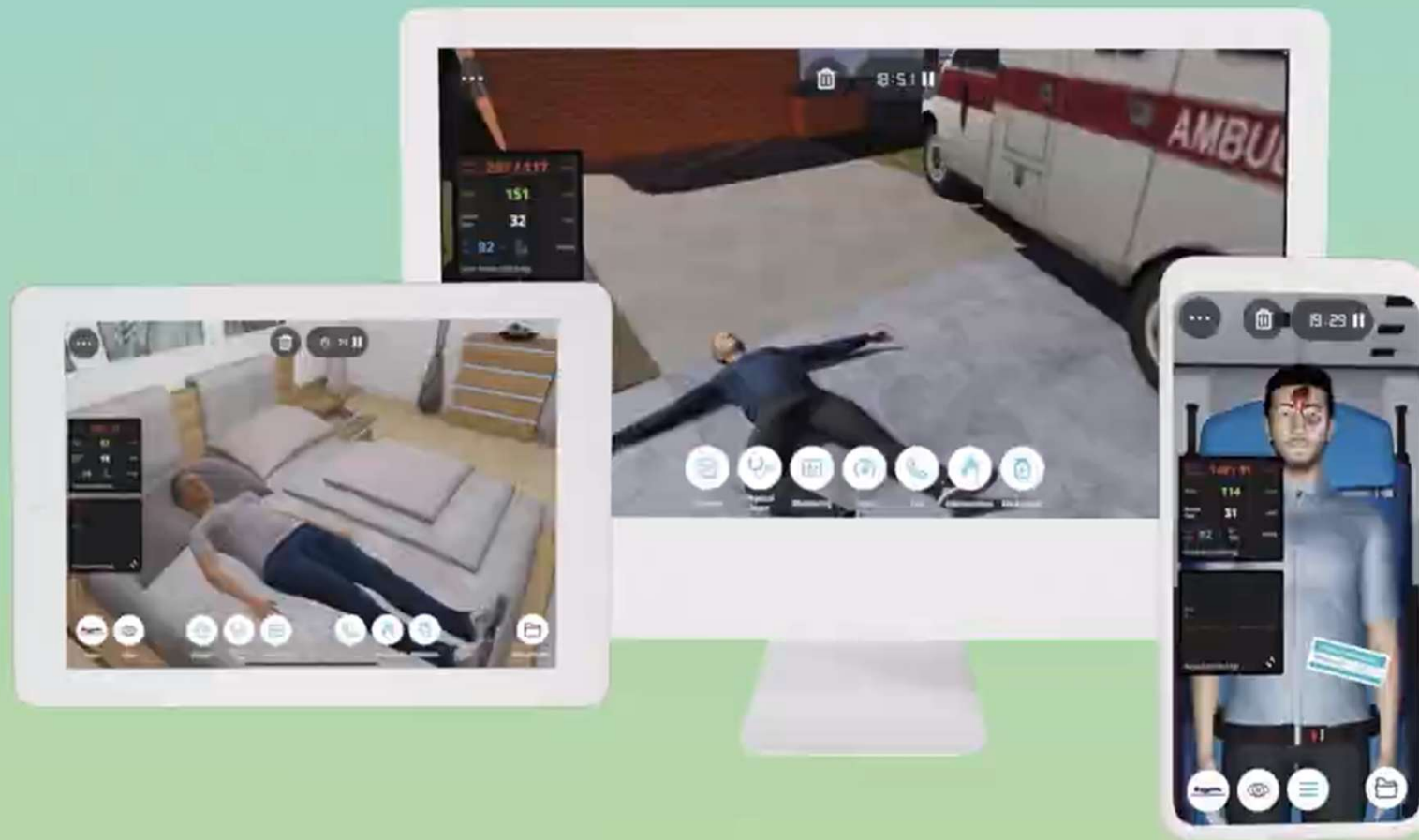
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Glass.Health Example

- In a 26-week, 750-gram preterm infant with respiratory distress and immediate stabilization orders are critical for survival.
- **Initial Resuscitation and Stabilization**
 - Maintain normothermia by placing infant in a plastic bag/wrap and under a radiant warmer, with temperature monitoring to avoid both hypothermia and hyperthermia.
 - Assess airway and provide respiratory support with heated, humidified gases starting with 21-30% oxygen, titrating based on pre-ductal pulse oximetry to target appropriate saturation ranges.
 - Consider early CPAP for spontaneously breathing infant with respiratory distress; if inadequate respiratory effort or persistent bradycardia, provide PPV with peak pressures of 20-25 cmH₂O and PEEP of 5 cmH₂O.
 - If heart rate remains <60/min despite 30 seconds of adequate PPV, initiate chest compressions at 3:1 ratio with coordinated ventilations.
 - Secure umbilical venous access for medication administration and fluid resuscitation if needed.
 - Perform brief physical examination to identify any major anomalies or birth injuries.

Body Interact



Body Interact

One powerful
Physiological Algorithm



The Risks of AI

- Hallucinations: AI makes things up
- Bias in datasets
 - NB African Context
- Over-reliance = de-skilling



Ethical and Legal Concerns

- - Privacy, POPIA, HPCSA concerns
- - Informed consent with AI use
- - Intellectual property and plagiarism

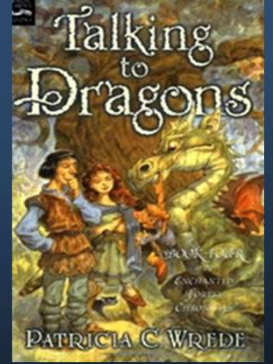


How to Mitigate the Risks

- - Always supervise AI output
- - Use trusted tools
- - Train students in prompt literacy (how to talk to LLM)



Prompt engineering



Technique	Description	Example Use Case
Persona Prompting	Instructing the AI to "act as" a specific role or expert to shape tone & output	<i>"You are a paediatric clinical educator. Create a training plan for interns."</i>
Chain-of-Thought (CoT)	Asking the model to explain its reasoning step by step to improve accuracy	<i>"Explain step-by-step how to diagnose neonatal sepsis."</i>
ReAct (Reason + Act)	Combines reasoning with real-time actions (e.g., calculations, retrievals)	<i>"Look up latest WHO neonatal mortality rates and explain trends."</i>
Zero-shot Prompting	No examples given – relies on model's pretraining	<i>"Summarise this patient report."</i>
Few-shot Prompting	Provide a few examples to guide the model	<i>"Here are 2 examples of SOAP notes – now write one for this case."</i>
Instruction Tuning	Use very specific, directive language to improve outputs	<i>"List 3 risks, in bullet points, with references."</i>



What's Coming Next?

- - AI mentors
- - Real-time feedback from smart devices
- - Virtual faculty assistants

Where to Start?

- - Start with ChatGPT, Glass.Health, or Bing AI
- - Try prompt engineering
- - Use it for admin first!



Resources to Explore

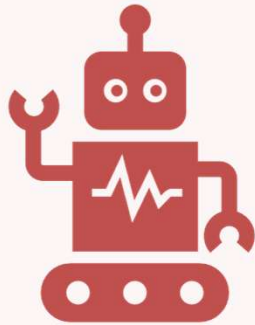
- ChatGPT (<https://chat.openai.com>)

- Glass AI (<https://glass.health>)

- SimX (<https://simxar.com>)

- PromptBase (<https://promptbase.com>)

Faculty Use Cases



- AI for: lecture prep, MCQ generation, OSCE design, mentorship



- Educators become prompt engineers

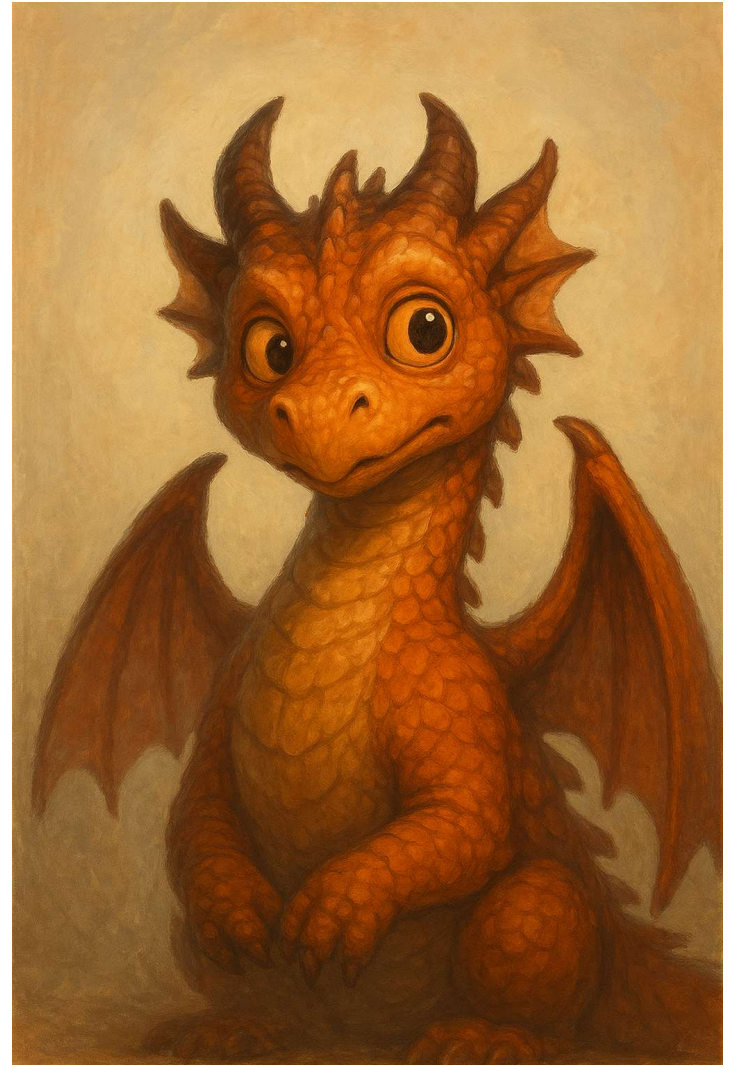


Summary: Train Your Dragon

- - AI is not a threat but a tool
- - Use it ethically, creatively, and wisely
- - Educators can lead the change

Q&A Slide

- Questions? Let's chat





Reflection

- - What will you try first?
 - ChatGPT?
 - Administration
 - Generate Questions
 - Marking questions
 - Editing articles
 - Simulation?



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Thank You

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