Doing your PhD with ChatGPT: How can I learn with artificial intelligence to become a good researcher?

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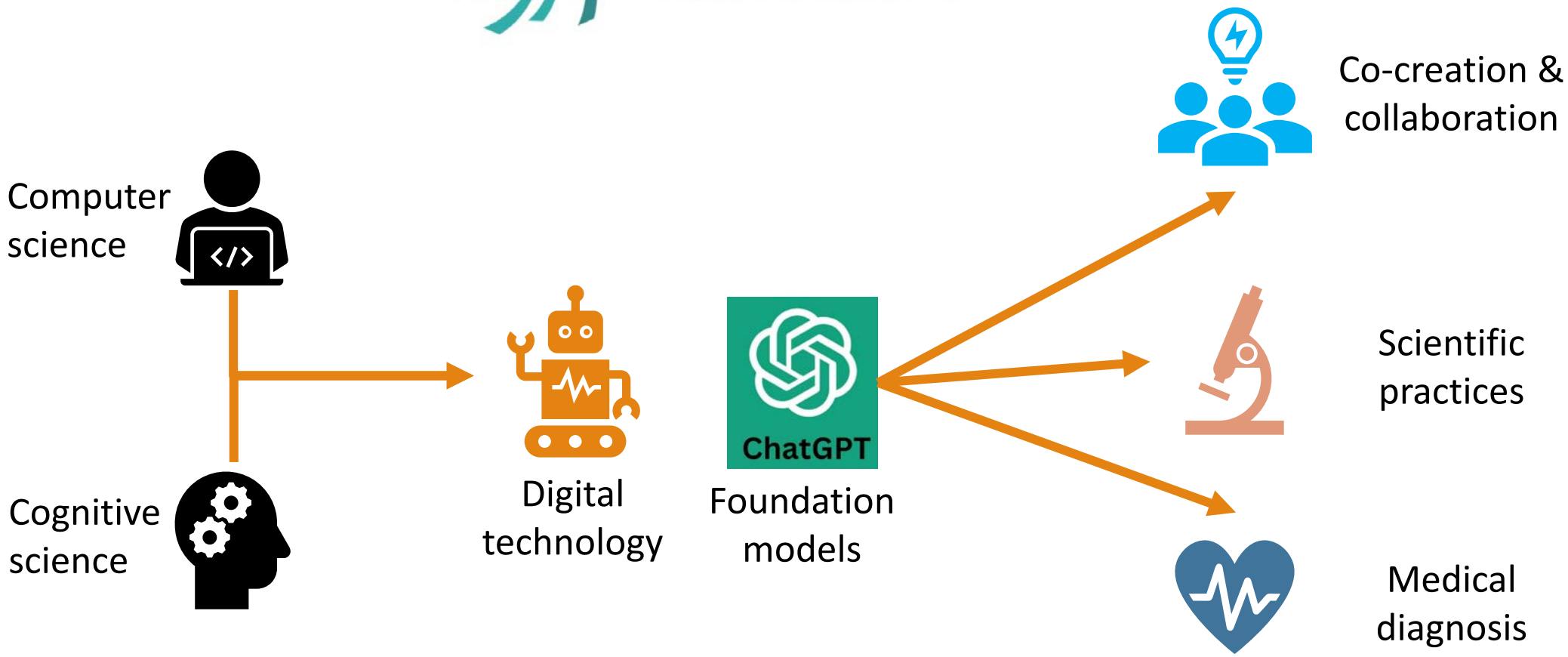
HEALTH CASCADE
EVIDENCE BASED CO-CREATION



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I. What is Generative AI?

- Text generation (e.g., ChatGPT, Bard, etc.)
- Image generation (e.g., DALL.E 2, Midjourney, etc.)
- Audio generation
- Video generation (e.g., Synthesia, etc.)
- Code generation (Copilot, AlphaCode, etc.)
- Data generation & augmentation
- Virtual worlds

"Generative AI has the potential to change the anatomy of work, augmenting the capabilities of individual workers by automating some of their individual activities"

– from *Economic Potential of Generative AI* by McKinsey

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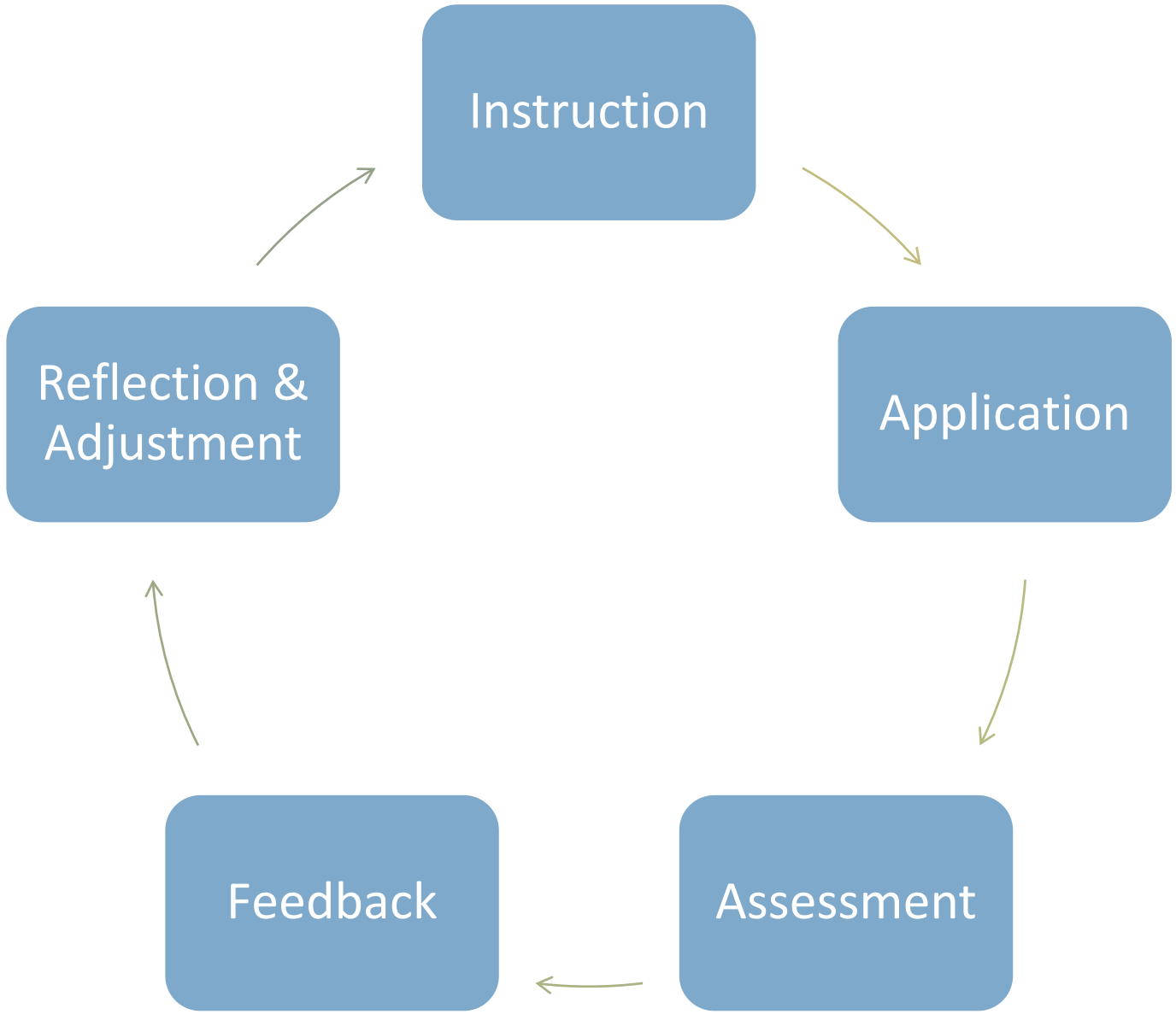
II. A (simple) learning model

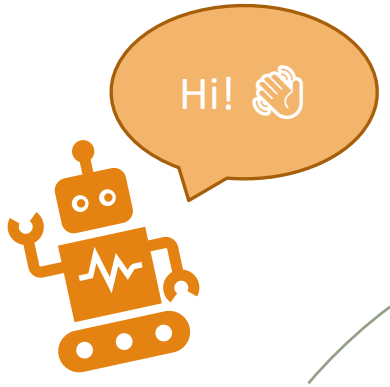
Professor

- Expert in their field
- Expert in the learning process

Student

- Becoming an expert in their field
- Need to acquire knowledge and skills





Instruction

- Resource Generation
- Content Customisation

Application

- Interactive learning
- Support and Guidance

Assessment

- Automated Testing
- Personalized Assessments

Feedback

- Immediate and Detailed Feedback
- Feedback Analysis

Reflection & Adjustment

- Data-Driven Insight
- Adaptative Learning Paths

Scalability of Iterative Learning

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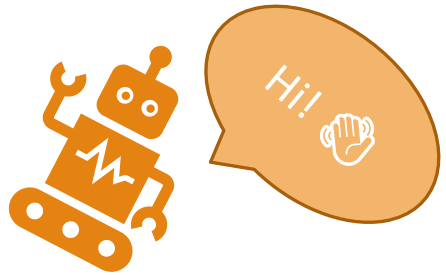
III. Human-AI Learning Synergy

How can I become a good researcher?

Learning process → **Knowledge & Skills**



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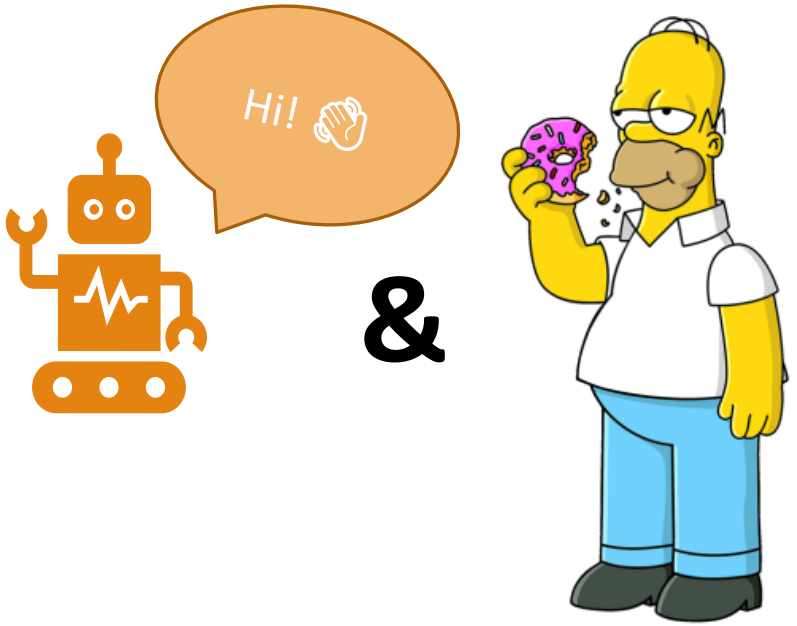
III. Human-AI Learning Synergy

Versatility: Generate, Classify, Summarise & Translate
Vast Information Processing
Consistency
Scalability
Multilingual Capability
(Un)biased analysis
24/7 Availability
Updating knowledge
Customisation and flexibility



&

Creativity
Emotional intelligence
Ethical judgment
Adaptability
Critical thinking
Intuition
Context understanding
Collaborative Skills
Learning from limited data
Flexibility in problem-solving

Automation & Augmentation

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How can I become a good researcher?

Learning process → **Knowledge & Skills**

Learning Process

- AI Automation

What activities can I delegate to the AI to advance?

- AI Augmentation

How can the AI help me with the learning process?

➢ Cooperate with the AI to develop my expertise

Knowledge & Skills

What **automation** & **augmentation** from the AI in my future work?

➢ Learn how to cooperate with the AI in my future work

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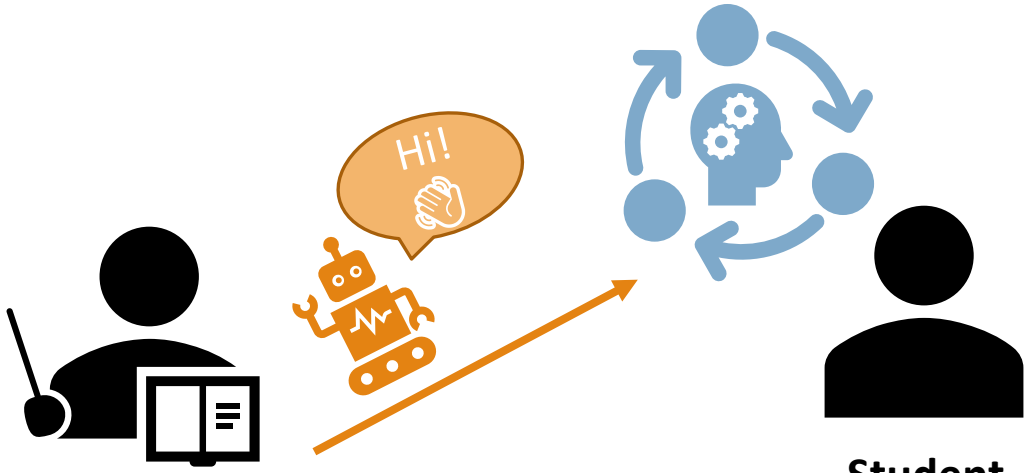
III. Human-AI Learning Synergy

Risks

- Skills Atrophy
- Risks of Bias and Misinformation
- Over-reliance on Technology
- Intellectual Property and Plagiarism Concerns
- Economic and Professional Displacement
- Accessibility and Equity Concerns
- Environmental impact



Professor

- Expert in their field
- Expert in the learning process

Student

- Becoming an expert in their field
- Need to acquire knowledge and skills

- Ability to identify what is needed
- Adapt the learning
- Evaluate the output quality

➢ **Professor:** learn how **to cooperate** with the AI
➢ **Student:** learn to **become an expert & cooperate** with the AI

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Thank you for your attention

Key takeaways

- Transformative potential of generative AI for learning
- Need to rethink the learning process
- Need to think about how to learn with AI
- …but also learn how to use AI
- Need to develop the double expertise: in their field & AI Cooperation

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My links: linktr.ee/q5loisel

Photo credit Saqlain Mughal shared by @Dipl.-Ing. Lars Behrendt