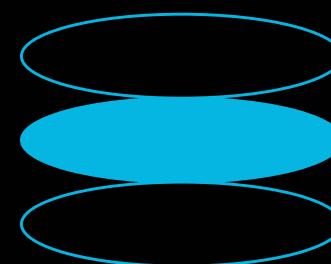




AI COMPETENCIES FOR MEDICAL EDUCATORS

Compiled by the CGEA Faculty Development SIG AI in Medical Education Workgroup
May 2025



Each outlined section below contains a list of categorized competencies along with respective mapped reference to the 2025 IACAI Vision and Integration Framework: Matrix I: Recommendations for Integrating AI - Educator Focus¹

This is the print layout version | [Interactive Outline](#) | [Interactive Mindmap](#)

A. Understanding AI (What is AI and how does it work?)

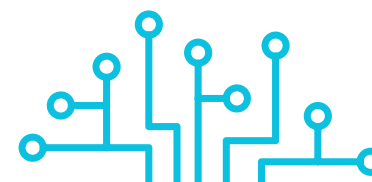
1. Understand AI fundamentals^{1,2,3,6,7,10}
2. Describe the statistical properties of AI and varied AI approaches to data^{3,6,7}
3. Compare AI versus GenAI^{4,5}
4. Define AI terminology^{1,2,6,7}
5. Recognize that LLMs involve various forms of human intervention^{1,4,14}
6. Recognize that AI is an adjunct not a primary source^{1,4,14}
7. Identify the range of AI applications pertinent to medical education^{1,3,6}
8. Describe the strengths and weaknesses of various AI systems^{1,3,6,10}

[II. AI Foundation Skills](#)

[Intrapersonal II.1. II.2, II.3 & Micro II.1. II.2](#)

[IV. AI Tools & Resources](#)

[Intrapersonal IV.1 & Micro IV.1](#)



B. Working with AI

1. Inform and communicate with AI to receive meaningful results^{1,2,3,4,8}
2. Describe factors that affect AI accuracy^{3,5}
3. Use AI for productivity and efficiency^{1,12,21}
4. Understand risks and unintended consequences of AI misuse^{4,10}

[I. AI Values, Culture & Integration Plan](#)

[Micro I.2, I.4](#)

[II. AI Foundation Skills](#)

[Intrapersonal II.1. II.2, II.3 & Micro II.1. II.2](#)

C. Critical Appraisal of AI Outputs

1. Critique AI outputs to determine alignment of results with the purpose of the task^{1,2,3,4,6,8,10}
2. Improve data literacy skills^{3,4,10}
3. Recognize when using AI is not appropriate for a certain task^{1,4}
4. Evaluate, assess, and appreciate the capabilities of AI tools^{1,3,5,14,17}

[IV. AI Tools & Resources](#)

[Intrapersonal IV.2 & Micro IV.2](#)

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D. Ethical Use of AI

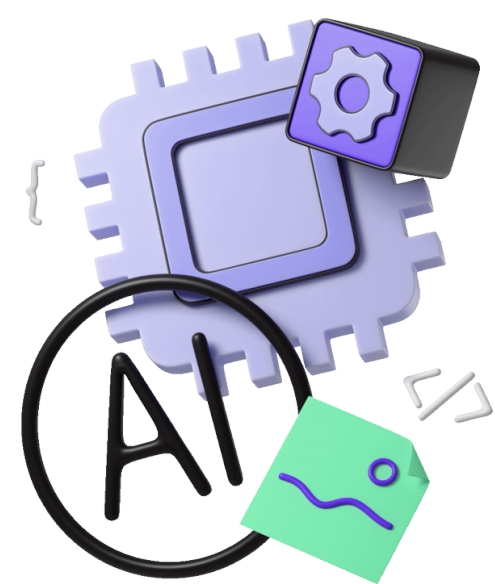
1. Identify and follow relevant guidelines on using AI for academic purposes^{1,2,4,14}
2. Acknowledge personal responsibility for fairness and equity in the use of AI tools^{1,2,4,5,6,7,10,14}
3. Understand the block-box nature of machine learning models as well as sources of data and output bias^{5,6,7,16}
4. Identify and evaluate how personal and structural biases can impact data inputs and outputs of AI tools^{1,2,4,6,10,14}
5. Credit AI contributions in your work through appropriate citation and attribution^{4,14}
6. Practice transparency and informed consent with stakeholders^{1,4,6,7,14}
7. Protect intellectual property (HIPPA, FERPA, protected human subject data)^{3,4,6,7,10,14}
8. Identify automation bias and preserving skills⁴

[II. AI Foundation Skills](#)
[Micro II.3](#)
[III. AI Ethical & Responsible Use](#)
[Intrapersonal III.1, III.2 & Micro III.1, III.2](#)
[IV. AI Tools & Resources](#)
[Intrapersonal IV.2 & Micro IV.2](#)
[VII. AI for Assessment](#)
[Intrapersonal VII.1, VII.2 & Micro VII.1](#)

E. AI Possibilities in Medical Education

1. **Curriculum Development**^{1,2,8,9,12,15}
 - a. Apply instructional design theory to AI pedagogical choices^{18,19}
 - b. Engage in curriculum mapping
 - c. Design syllabi
 - d. Develop learning objectives
 - e. Create outlines and presentations
 - f. Develop cases, vignettes, varied examples, explanations, analogies
 - g. Use Text to Video (creation of videos using OpenAI's Sora)
2. **Learning Activity Development**^{1,2,8,9,12,15}
 - a. Create chatbots or patient cases for students to practice clinical reasoning
 - b. Develop or utilize virtual simulation activities
 - c. Create non-examples for students to analyze/evaluate
 - d. Create or utilize personalized learning platforms (intelligent tutoring systems)
3. **Assessment & Evaluation**^{1,2,8,9,12}
 - a. Create assessments based on learning objectives
 - b. Create multiple choice questions (MCQs)
 - c. Summarize assessment results to inform future instruction
 - d. Analyze videos of procedural skills
 - e. Create rubrics
 - f. Analyze narrative text (such as SOAP notes)
4. **Selection: Recruitment, Admissions, and Scholarships**²⁰
 - a. Analyze predictive outcomes (predict ability or success)
 - b. Analyze data through labeling and sorting (e.g. application review, scholarship review)

[Intrapersonal I.4, V.1, V.2, IX.1](#)
[Micro I.2, I.3, I.4, V.1, V.2, VII.1, VII.2, IX.1, IX.2](#)
[Meso IX.1-5](#)



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F. AI Enhanced Clinical Encounters (curriculum for students)

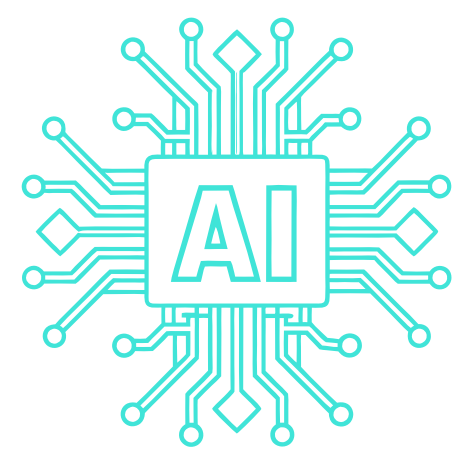
1. Develop curriculum about AI in healthcare for students^{1,3,5,6,7,11,16,17}

[VI. AI to Enhance Clinical Skills & Clinical Training](#)
[Intrapersonal VI.1 & Micro VI.1-6](#)

G. Using AI in Research and Scholarship

1. **Understanding AI Applications in Research**
a. Explain the role and potential of AI in medical education research
b. Identify AI-driven tools and methodologies that support qualitative, quantitative, and mixed-methods research.
2. **Ethical and Responsible AI Use in Research**
a. Apply ethical principles when using AI in research
b. Demonstrate awareness of AI-related policies, regulations, and institutional review board (IRB) requirements for research involving AI-generated data.
3. **AI for Data Collection and Analysis**
a. Use AI-powered tools to assist with literature searches, systematic reviews, and data synthesis.
b. Leverage AI-based qualitative and quantitative analysis tools
4. **AI in Scholarly Writing and Dissemination**
a. Use AI-assisted writing tools to enhance clarity, coherence, and efficiency in writing.
b. Apply AI tools for citation management, plagiarism detection, and summarization of research findings.
c. Ensure proper authorship and attribution practices.

[X. AI for Research & Research Mentoring Skills](#)
[Intrapersonal X.1 & Micro X.1-3](#)
[Intrapersonal III.3, IV.1-2](#)



H. Continuous Professional Development (CPD) in AI

1. Engage in AI experimentation^{1,7,13}
2. Assess AI knowledge gaps^{1,2,12,13}
3. Create an AI learning plan^{7,13}
4. Seek AI learning resources^{2,7,13}
5. Reflect on AI learning^{1,2,4}
6. Share AI with colleagues^{1,13}

[Intrapersonal](#)
[I.1, I.2, II.1, II.2, V.1, V.2, VI.3, VII.1, VII.2, IX.1, IX.2, X.1, XI.1, XII.1](#)
[Micro 1.2, 1.4](#)

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