



Navigating A.I.

The New Frontier in Dietetics

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Image generated with ChatGPT 4.0 using the prompt "registered dietitians using AI."

Disclosures

Current affiliations. No conflicts of interest to report.

Marketing, Communications, Education, Project Management, &/or Community Relations

- Nutrition by Drew, PLLC
- TELUS Health / TELUS Santé
- Microsoft Canada
- MedWorks Canada

Academia (Teaching, Advisement, & Committees)

- SUNY Buffalo State University
- Hilbert College
- Center for Online Teaching Excellence, SUNY

Instructional Design, Professional Development Planning, &/or Practice Regulation

- The Academy of Nutrition and Dietetics
- The Committee for Lifelong Learning
- The College of Dietitians of Ontario



Blueprints for Brilliance: Today's LOs

Recognize key AI technologies, including their perceptions and historical & current use in public, private, & professional settings.

Utilize generative AI (GenAI) through structured prompts to help strategize & support dietetic practitioner related tasks.

Discuss the B.E.A.S.T. of ethical implications in order to plan for responsible GenAI integration & use in any area of dietetic practice.

Consider dietetics program curriculum enhancements in order to help prepare future dietetic practitioners for an AI-included profession & world.

Disclaimers

Today's speaker

experience vs expertise

Info & application

101 info with some practical apps

Now vs later

info relevance & applicability

Commercialism

~~product promotion~~

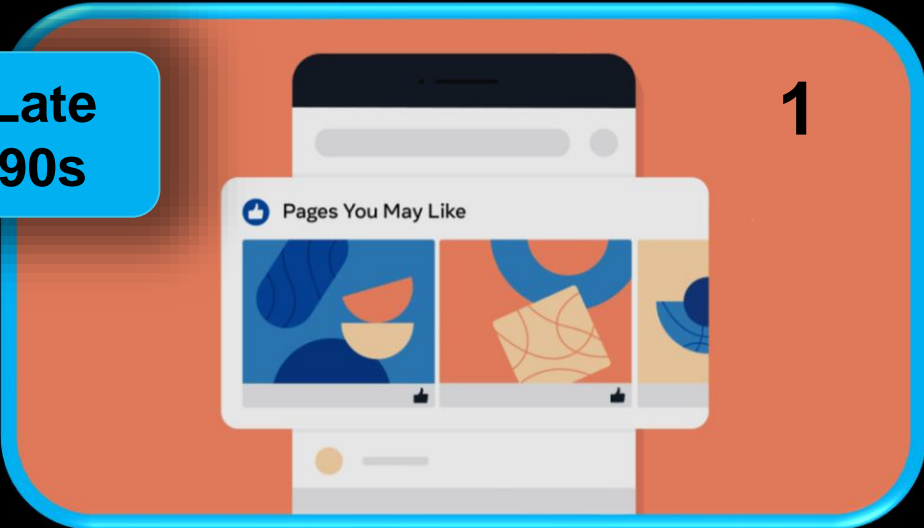
Artificial Intelligence (AI)¹

A field of computer & data science focused on creating **systems capable of performing tasks that typically require human intelligence.**

- understand language
- reason
- respond / output
- problem solve
- adjust
- learn from experience

Encompasses a range of technologies, including machine learning (ML) & deep learning (DL), natural language processing (NLP), computer vision, robotics & more.

Late 90s



Early 90s



POLL:
Which product/service uses a key AI technology?

3

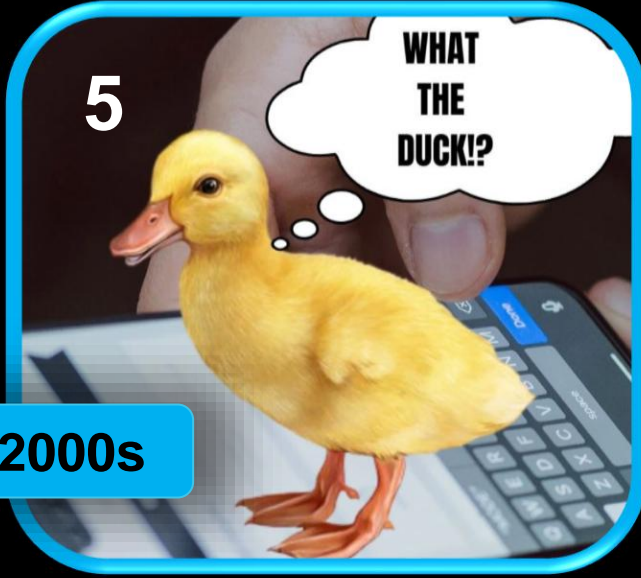


Late 80s

Early 90s

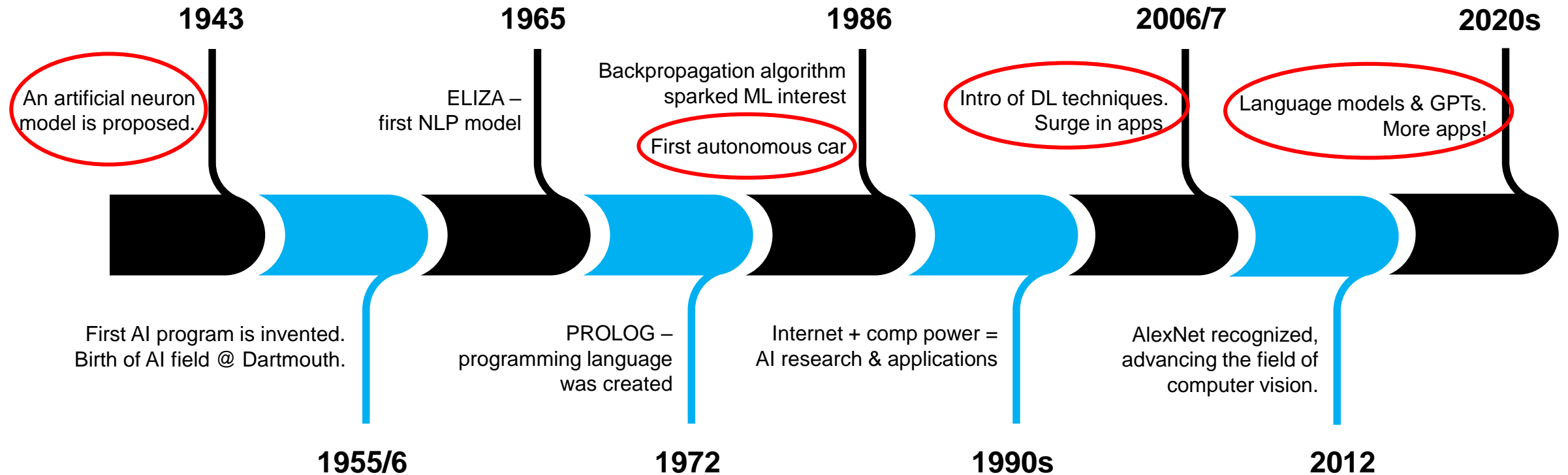


5

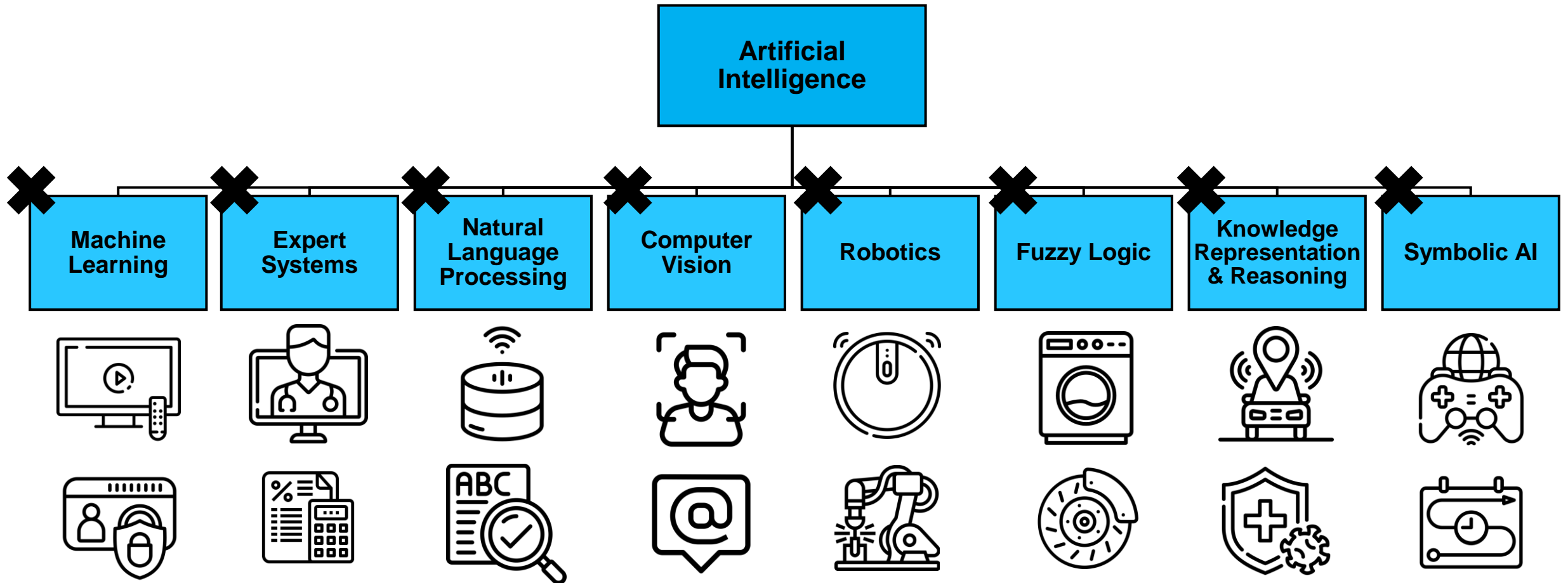


2000s

AI is Much Older Than We Think²



Key Technologies of AI³



A Spectrum of Attitudes About AI ⁴⁻⁶



10 Industries Impacted by A.I.^{7,8}



Service Automation
& Personalization



Fraud Detection &
Custom Investments



Personalization &
Supply Chain Opt.



Autonomous
Vehicles &
Traffic Flow Opt.



Predictive
Maintenance &
Quality Control



Content Automation
& Personalization



Adaptive LMS,
Enhanced Teaching,
& Auto Admin



Crop Health
Monitoring &
Precision Ag



Enhanced
Surveillance &
Threat Detection



Diagnostic Accuracy
& Patient Care

AI to Assist Practitioners with Supporting Lifestyle Changes

- Healthcare economics may limit intensive, team-led lifestyle counseling and support.
- Behavioral support can be time-intensive, making needed services financially unfeasible for many practices.
- AI-practitioner partnerships can enable scalability, including the ongoing lifestyle support that patients, clients & communities need.

**AI Applications in
Food, Nutrition, Dietetics,
& Health/care**

Clinical



Abbott Labs, global

- Predictive analytics AI within CGMs
- Personalized meal & insulin adjustments
- <https://www.freestyle.abbott/us-en/home.html>

Cleveland Clinic, Ohio, USA

- EHR-integrated predictive analytics
- Heart disease risk assessment based on patient profiles
- <https://consultqd.clevelandclinic.org/artificial-intelligence-methodology-refines-cardiac-risk-stratification-in-cancer-patients>

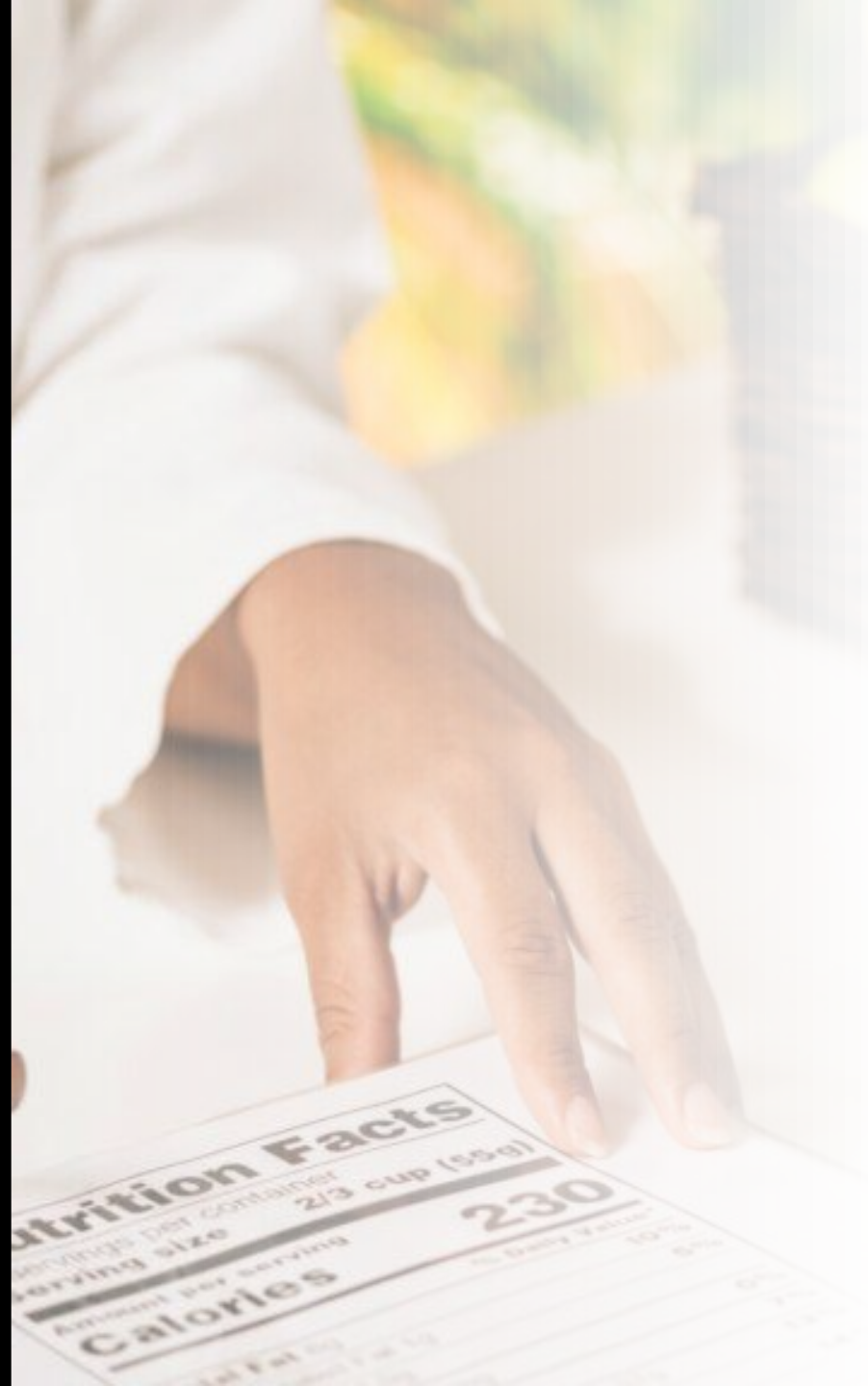
Princess Margaret Cancer Centre, CAN

- Predictive analytics & machine learning
- Early Dx, personalised Tx, outcomes improvement
- <https://www.uhnresearch.ca/news/unlocking-future-ai>

Sanvello Health, USA

- AI-powered in-app & program CBT tools
- Mood & intake tracking, identify emotional eating support
- <https://www.ableto.com/>

Outpatient, & Private Practice



NutriSense, USA

- Personalized dietary assessments using AI to analyze food logs, nutrient intake, & client health data
- <https://www.nutrisense.io/>

Practice Better, Canada

- Automating scheduling, billing, & client management tasks for improved efficiency in private dietetic practices
- <https://practicebetter.io/>

- **Automated Dietary Assessment & Tracking** (SnapCalorie, Bite AI, etc.)
- **Virtual Coaching & AI-Enhanced Patient Engagement** (HealthifyMe, ObvioHealth, etc.)
- **Remote Patient Monitoring & Proactive Interventions** (Omada Health, Virta Health)

Food Service Management



Compass Group, USA

- Predictive analytics & automation
- Forecast demand & reduce food waste
- <https://www.winnowsolutions.com/>

Sodexo, global

- Inventory optimization, menu planning, meet dietary needs, cost reduction
- <https://www.zenput.com/>

Healthtech Solutions, USA

- Language models & machine learning
- Meal personalisation (MNT)
- <https://healthtechsolutions.com/>

Population & Public Health



Feeding America, USA

- Machine learning, ArcGIS
- Identify food deserts & at-risk populations for nutritional interventions
- <https://www.feedingamerica.org/about-us/press-room/i-am-hunger-america-psa>

CDC, USA

- Surveillance, outbreak response, safety monitoring, clinical data detection, predictor identification, PSA communications
- <https://www.cdc.gov/surveillance/data-modernization/technologies/ai-ml.html>

NielsenIQ, global

- Real-time monitoring of dietary trends to inform public health policy and program adjustments
- <https://nielseniq.com/global/en/landing-page/why-niq-bases/>



Harvard Chan School of Public Health, USA

- AI-generated analysis of dietary patterns & health outcomes in large-scale cohort studies

Arizona State University, USA

- Online nutrition program leverages adaptive learning to create custom learning experiences based on student progress
- <https://news.asu.edu/20240827-science-and-technology-ai-powered-educational-experiences-underway-asu>

University of British Columbia, Canada

- AI simulations to train students in patient assessment & counseling techniques
- <https://www.moosejawtoday.com/local-news/new-bc-based-clinical-simulation-tech-changing-how-medical-students-learn-diagnostic-skills-3461505>

Food Industry



PepsiCo, USA

- Develop product flavours & optimize ingredients to meet health trends
- <https://www.pepsico.com/our-stories/story/artificial-intelligence-at-pepsico>

Tyson Foods, USA

- Real-time quality control & food safety monitoring
- <https://www.clearlabs.com/>

Nestlé, global

- Assess nutrient content for labeling to meet health-focused consumer demands
- <https://nestleyouthentrepreneurship.com/artificial-intelligence-and-data-science-support-innovation>

Long-Term Care



Meals on Wheels, USA

- AI tracks nutrient intake & adjusts dietary plans for residents in long-term care
- <https://www.linkedin.com/pulse/harnessing-ai-impact-how-meals-wheels-can-services-wilson-phd-jwqkc/>

Genesis HealthCare, USA

- Predictive analytics for early detection of malnutrition & health deterioration in long-term care settings
- <https://genesishealth.ai/>

Brookdale Senior Living, USA

- Enhanced care for residents with Alzheimer's with detection: VR experiences, smart home technologies for monitoring activity, patient assistance & therapeutics
- <https://www.brookdale.com/en/healthcare-professionals/blogs/2023/04/technology-memory-care.html>

Management & Leadership



UNICEF, global

- Tableau with AI-based program
- Track & measure outcomes of health programs to refine program strategies
- <https://www.unicef.org/innovation/stories/venting-into-ai-data-science>

Mayo Clinic, USA

- Microsoft Power BI with AI analytics
- Predict patient flow, optimize staffing & ensure adequate nutrition coverage in hospitals
- <https://businessdevelopment.mayoclinic.org/wp-content/uploads/2024/11/The-future-according-to-Mayo-Clinic-How-AI-is-transforming-the-hospital-CB-Insights.pdf>
- Talent Acquisition (HireVue)
- Leadership Development (BetterUp)
- Program Development (IBM Watson)
- Project Management (Monday.com)

AI Applications in Food, Nutrition & Healthcare

Clinical assessment
& diagnosis
assistance^{9,10}

Nutrition care plan
development¹¹

Disease risk &
health outcome
predictions^{12,13}

Social media
data analytics¹⁴

Wearables
& smartphone
apps¹⁵⁻¹⁷

Chatbots^{18,19}

CBR & CDS
– DM care²⁰

Policy & climate
impact on food
security & waste²¹

Food safety,
quality &
inventory²¹

GenAI: Everyone's Assistant & Second Brain

- ✓ Quick second opinion
- ✓ Education, planning & guidance
- ✓ Copy writing, editing & translation
- ✓ Business strategy
- ✓ Communications & collaboration
- ✓ Article summarization & analysis
- ✓ Text-to-image & -video
- ✓ Research & development

Developing Prompts for GPT Chatbots

GPT Prompts: What Ya Give ²²

Considerations for Developing a Successful AI Chatbot Prompt

- 1. Provide context:** This involves giving background information or details relevant to the prompt. For example, if you're asking for advice on meal planning for a specific population, providing context about their dietary needs or preferences helps generate a more tailored response.
- 2. Assign a role:** This is where you specify the role you want an AI Chatbot to serve. For example, you might want an AI Chatbot to act as a nutrition educator, a recipe developer, or a research assistant. This helps guide the nature of the response.
- 3. Use keywords:** Keywords are important terms related to your query that help an AI Chatbot understand the main focus of your request. For example, in a prompt about diets, keywords might include "heart-healthy," "omega-3 fatty acids," and/or "fiber."
- 4. Clarify inclusions:** This involves specifying what information or elements you want included in the response. For example, if you're asking for a meal plan, you might clarify that you want it to include breakfast, lunch, dinner, and snack options.
- 5. Request sources of where information came from that was used to develop the output/response:** This involves asking an AI Chatbot to cite the sources or provide references for the information used in its response. This is important for verifying the accuracy and reliability of the information.
- 6. Specify the desired response such as language/tone use, format, and length:** This component allows you to tailor the output to your needs. For example, you might specify that you want a response in a conversational tone, formatted as a bullet-point list, and not exceeding 300 words.
- 7. Be complete & specific:** This means providing all the necessary details to ensure a comprehensive and precise response. For example, if you're asking for recommendations on dietary supplements, being specific about the target population, health goals, and any contraindications helps generate a more accurate answer.

Important considerations of the process in working with an AI Chatbot include:

Iterate

Repeat a process with the aim of improving the outcome each time. Iterate on prompts

Refine

Make small adjustments to improve the quality of prompt and output. Refining your prompts might involve tweaking the wording, adding specific details,

Train

Teach the AI model to understand and respond to a wide range of inputs. Providing feedback on responses or using specific prompts that guide the AI to give the kind of answers

Experiment

Try out different approaches to see what works best. Testing various prompt structures, exploring different topics, or experimenting with how you phrase your tasks or questions to discover the resulting responses/output

Task

context

inclusion

response

examples

Iterate

Question

direct

uncomplex

open vs closed

GenAI Chat Prompt Structure²²

- **Role**
- **Context**
- **Inclusions**
- **Keywords**
- **Response**

As a nutrition expert looking to attract more clients,

I need effective lead generation strategies for my nutrition business.

Provide a list of strategies and examples for social media marketing, networking, and communications. Focus on search engine optimization.

The language used in the marketing and communications copy/content needs to be engaging and persuasive yet kind and humorous.

Improving Productivity & Client Satisfaction

Time to Vote!

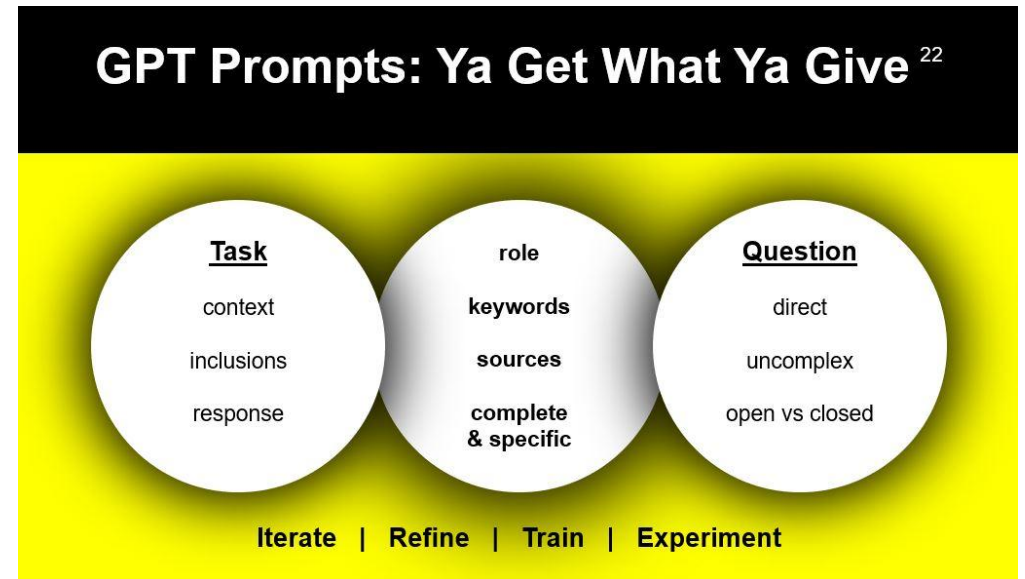
Personalising a meal plan & recipes in context of:

1. Limited foods at home

2. Diabetes management

Prompt!

Personalising a meal plan & recipes in context of **limited foods at home:**



I have a client who has **limited foods at home** but needs to **make them last for herself and her child for the next 3 days**. Consider that **only an electric stove and oven** is available for heating/cooking/baking.

Act as an **expert meal planner** and create a **3-day meal plan** with **simple recipes** for **breakfast, lunch, and dinner** **using the following ingredients**: 1kg flour, unlimited water, 1 loaf of bread, 1 litre of canola oil, 10 eggs, 2 cans of black beans, 2 cans of tuna, 4 cans of diced carrots, 1 can of corn, 300 grams of chicken, 1 litre of milk, 1 lime, salt, pepper, cumin, garlic powder, 2 medium white onions, 6 apples, 200 grams of guava paste, 1kg of white potatoes, 1 litre of mango juice, and 1 large bag of frozen peas.

Please ensure the meals provide **adequate calories and protein** for a 30-year-old female and 6-year-old boy

Provide protein, fat, and carbohydrate **nutrition information for each prepared food item**, as well as for the **suggested adult & child serving sizes**. Include **where you retrieved nutrition information from**. Provide the meal plan, recipes, preparation instructions, and nutrition information **all in an organized table format**.

Recipes and Preparation Instructions:

1. **Scrambled Eggs with Toast:** Beat eggs with salt and pepper. Cook in a non-stick pan with a little oil until set. Serve with toasted bread.
2. **Tuna Salad with Bread:** Mix canned tuna with diced onions, lime juice, salt, and pepper. Serve on bread.
3. **Black Bean and Carrot Soup:** Blend canned black beans and canned carrots with water to desired consistency. Season with cumin, garlic powder, salt, and pepper. Heat until warm.
4. **Guava Paste on Toast:** Spread guava paste on toasted bread.
5. **Chicken and Pea Stir-Fry:** Dice chicken and cook in a pan with oil until browned. Add frozen peas, diced onions, and season with salt and pepper. Cook until peas are heated through.
6. **Potato and Onion Bake:** Slice potatoes and onions thinly. Layer in a baking dish, drizzle with oil, and season with salt and pepper. Bake at 200°C until potatoes are tender.
7. **Milk and Apple Porridge:** Dice apple and cook in a pot with milk until soft. Serve warm.
8. **Tuna and Carrot Patties:** Mash canned tuna and canned carrots together. Form into patties and fry in a pan with oil until golden on both sides.
9. **Black Bean and Corn Salad:** Mix canned black beans, canned corn, diced onions, lime juice, salt

Prompt!

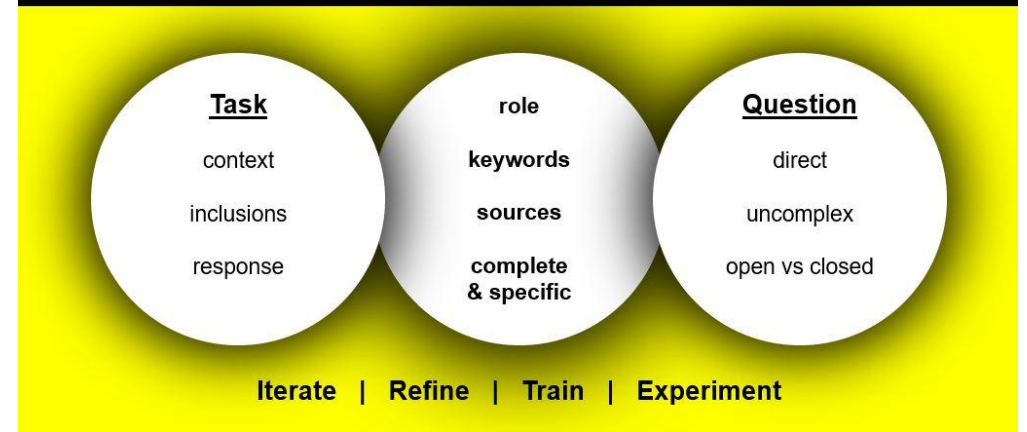
Personalising a meal plan, recipes, & grocery list in context of **diabetes management:**

As a **nutrition expert specializing in diabetes management**, create a **5-day meal plan** for a **single adult male with type 2 diabetes**, focusing on providing **consistent protein and carbohydrate intake** throughout all 3 meals and 2 snack periods each day. The individual is **lactose intolerant and does not eat seafood**. The **target protein intake** is 25g per meal and 10g per snack, and the **target carbohydrate intake** is 60g per meal and 30g per snack.

For each day, provide: **Breakfast, Lunch, Dinner, and Two Snack Options**. Include **simple recipes** for each meal and snack. Include **preparation instructions and nutrition information** for each prepared food item and **suggested adult serving sizes**, including **protein, fat, and carbohydrate content for each serving**. Provide a **Grocery Shopping List** with needed items **organized by store sections** (produce, meat, bakery, frozen, canned & boxed foods). Please ensure that the meal plan is **balanced, varied & suitable for managing diabetes**.

Use **reliable sources for nutrition information & cite them accordingly**. Provide the meal plan, serving sizes, and nutrition information in **one table**, the recipes in **another table**, and the grocery list in **a third table**. **Exclude any ingredients or products** that contain lactose & seafood.

GPT Prompts: Ya Get What Ya Give ²²



Grocery Shopping List

| Section | Items |
|----------------------|--|
| Produce | Spinach, mixed greens, broccoli, apples, bananas, avocados, asparagus, carrots, mixed vegetables, sweet potatoes, green beans, oranges, berries, cherry tomatoes, romaine lettuce |
| Meat | Chicken breast, beef, pork chop, turkey breast, ground turkey, salmon fillet |
| Bakery | Whole wheat bread, whole wheat tortillas, whole wheat croutons, rice cakes |
| Dairy | Lactose-free Greek yogurt, lactose-free cottage cheese |
| Pantry | Almond butter, balsamic vinaigrette, soy sauce, garlic, brown rice, quinoa, hummus, peanut butter, whole wheat pasta, tomato sauce, granola, protein powder, honey, almonds, dried apricots, whole wheat pasta |
| Canned & Boxed Foods | Lentils, broth, canned pineapple chunks |
| Frozen | Edamame |

**Engaging Targeted Audiences &
Developing Meaningful Content**

Time to Vote!

Brainstorm interactive teaching & learning methods for:

**1. An in-person workshop
on cardiovascular health
& nutrition**

**2. An online nutrition
course focused on
healthy aging**

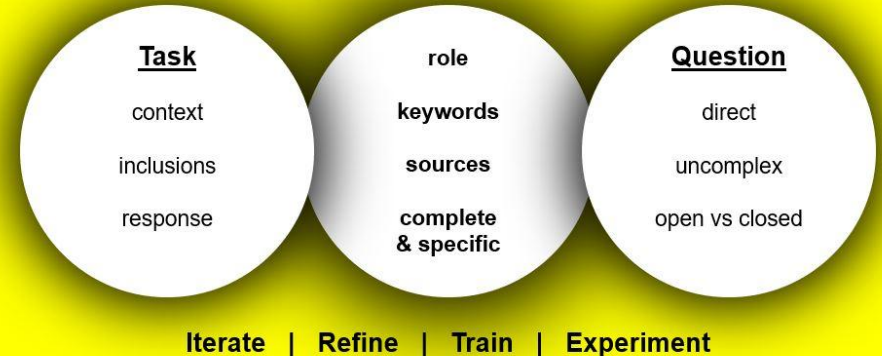
Prompt!

Eliciting interactive teaching & learning methods for an **in-person workshop on cardiovascular health & nutrition:**

I'm **planning an in-person workshop on cardiovascular health and nutrition** for a **group of adults aged 40 to 60**. I need to develop a workshop that is **highly interactive and engaging** in order to **enhance learning and retention of key concepts**.

Act as an **instructional designer and brainstorming partner** and provide me with **creative ideas for interactive teaching and learning strategies** for this workshop. How can I **incorporate hands-on activities, group discussions, and visual aids** to effectively convey the importance of cardiovascular health and nutrition? Please include **specific examples of activities and discussion topics** that will **engage participants and encourage active participation**.

GPT Prompts: Ya Get What Ya Give ²²





ChatGPT

Memory updated

To create an engaging workshop on cardiovascular health and nutrition for adults aged 40 to 60,

6. **Role-Playing Scenarios:** Create role-playing scenarios where participants act out situations that require them to make heart-healthy choices, such as dining out or attending a social gathering.
7. **Quiz Games:** Incorporate quiz games with questions related to cardiovascular health and nutrition. This can make learning fun and reinforce key concepts.
8. **Visual Aids:** Use visual aids such as infographics, charts, and diagrams to illustrate key concepts and make them easier to understand.
9. **Goal Setting:** Guide participants in setting realistic goals for improving their cardiovascular health, such as increasing their daily physical activity or reducing their sodium intake.
10. **Q&A Sessions:** Allocate time for participants to ask questions and seek clarification on topics they find challenging.

to appreciate food. This can help promote healthier eating habits.

5. **Interactive Discussions:** Break participants into small groups to discuss common challenges to maintaining a heart-healthy diet and share strategies for overcoming these challenges.



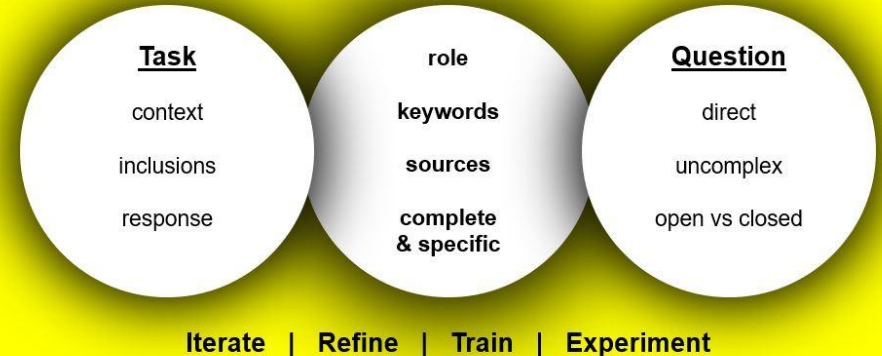
Prompt!

Eliciting interactive teaching & learning methods for an **online nutrition course focused on healthy aging:**

I'm **developing an online nutrition course** focused on **healthy aging, targeting adults, ages 40 to 60**, who want to improve their health and well-being through their dietary intake. I want to create a **comprehensive and engaging course** that **covers key topics** such as nutrient needs, simple meal planning and preparation, and lifestyle strategies for healthy aging.

Act as an **instructional designer and brainstorming partner** and provide me with ideas for **interactive and engaging teaching and learning strategies**. How can I **make the course interactive and engaging for participants**? Please include **suggestions for incorporating multimedia elements, self assessments that are fun, hands-on activities that enrollees can complete themselves at home, and discussion forum prompts that provoke critical thinking while applying knowledge they likely have in life already**, in order to enhance the learning experience.

GPT Prompts: Ya Get What Ya Give ²²



Multimedia Elements:

1. **Video Lectures:** Break down complex topics into short, digestible videos with visuals and

Discussion Forum Prompts:

1. **Case Studies:** Present real-life scenarios related to healthy aging and ask participants to discuss solutions based on course content.
2. **Debate Topics:** Pose controversial topics related to nutrition and aging to stimulate critical thinking and discussion.
3. **Peer Feedback:** Encourage participants to share experiences and offer constructive feedback to their peers' meal plans or lifestyle changes.

Additional Ideas:

1. **Guest Speakers:** Invite guest speakers, such as nutritionists, chefs, or fitness experts, to share their insights and expertise.
2. **Resource Library:** Provide access to articles, videos, and research papers for further reading and exploration.
3. **Live Q&A Sessions:** Host live sessions where participants can ask questions and interact with you and other experts in real-time.

3. **Meal Planning Exercises:** Guide participants in creating personalized meal plans that meet their nutrient needs and preferences.



Engaging Targeted Audiences & Developing Meaningful Content

**Example Prompt for
Tailoring Instructional Materials**

Prompts

Tailoring
for a group
of fans (to

I need to
of teens
Taylor Swift
message

1. **Taylor Swift-Themed Quiz:** Create a quiz that includes questions related to both Taylor Swift trivia and cardiovascular health and nutrition facts. This can add a fun and familiar element to the learning experience.
2. **Lyric Analysis:** Choose Taylor Swift songs with themes of health, vitality, or self-care, and discuss the lyrics in relation to cardiovascular health. For example, you could analyze how lyrics about self-confidence or empowerment relate to making healthy choices.
3. **Swiftie Wellness Challenge:** Develop a wellness challenge inspired by Taylor Swift's music. For example, participants could earn "Swiftie points" for completing heart-healthy activities like going for a walk or trying a new healthy recipe.
4. **Create a "Swiftie" Cookbook:** Collaborate with participants to create a cookbook featuring heart-healthy recipes inspired by Taylor Swift song titles or lyrics. Each recipe could be paired with a brief explanation of its nutritional benefits.
5. **Role-Playing as Taylor Swift:** Encourage participants to imagine themselves as Taylor Swift and make health-conscious decisions based on her values and lifestyle. This could be done through scenarios or games.
6. **Music Video Parodies:** Have participants create their own music video parodies of Taylor Swift songs, but with lyrics rewritten to promote cardiovascular health and nutrition. This can be a fun way to reinforce key messages.



Question

direct
uncomplex
open vs closed

ment

or a group
age fans of
teens?

Communications, Marketing & Education

- Recipe & grocery
- Resume develop
- Campaign, prog
- Copy, script, ima
personalization



Jane Guo (she/her)
MCN, RD, LD

Advocate for AI in Nutrition
Facebook Group: AI Powered Nutrition

“ Writing good prompts can be tedious. My favorite hack?

Ask ChatGPT to write the prompt first, then tweak it as needed.

Perfect for when you're low on brainpower or unsure how to start.

Also, **save your favorite prompts to copy/paste later.** ”

- **Considerations:** Output quality
(accuracy, misinterpretation & bias),
Intellectual property (IP) & Attribution

ChatGPT
Social Media Marketing Strategy for "Nourished College Life Program"

1. Platform Focus:

through targeted ads, groups, and sharing informative content and stories to engage a younger audience. Partners, and organizations involved in higher education

on, dorm room cooking, and budget-friendly

partners or endorsements from educators. Countdown to the program launch date. Posts about college nutrition and the program. Instagram or Facebook to answer questions and

has #CollegeNutrition, #HealthyCollegeLife,

gram to reach parents of college-bound students

5. Collaboration and Partnerships:

Partner with college-focused influencers, nutrition bloggers, and higher education institutions to expand your reach.

Decreasing the Data Daze

- Extract, convert & summarize
- Interpret (text only) & illustrate
- Infer & apply
- **Tool Considerations:** Output quality; Multilingual; URL support
- **Data Interpretation Considerations:** Trainability; Volume & discernability; Data format; Data bias & mis-interpretation; Privacy & security

ChatGPT 4

Key Considerations in Using GenAI for Text Summarisation¹⁴

Efficiency

- **Time-Saving:** Quickly extract key information from lengthy documents.
- **Improved Productivity:** Focus on essential details and enhance efficiency.
- **Enhanced Comprehension:** Grasp complex topics more easily.

Critical Considerations in Outputs/Responses

- **Loss of Context:** Summaries may omit nuanced details, potentially leading to a loss of context.
- **Biased Summaries:** AI may inadvertently introduce bias based on its training data.
- **Inaccuracy:** Summaries may not always be completely accurate or comprehensive.

Optimizing Usage

- **Verify Information:** Always verify critical information from the original document.
- **Contextual Understanding:** Ensure summaries capture the essence of the original document.
- **Output Quality:** Assess the quality of summaries to ensure they meet your needs.

Advanced Features

- **Multilingual Support:** Check if the program supports summarization in multiple languages.
- **URL Support:** Determine if the tool can identify and access weblinks within the document.
- **Customization Options:** Evaluate if the tool allows for customization of summaries.

Data Interpretation

- **Trainability:** Consider the ability to train the AI to improve summarization accuracy over time.
- **Volume & Discernability:** Ensure the tool can handle large volumes of data and discern key info. different types of documents.

Practical Considerations

- **Co-integration:** Determine if the tool integrates with other platforms for seamless workflow.
- **Licensing:** Consider the licensing model of the tool, including restrictions on usage & distribution.
- **Customer Support:** Assess the availability and quality of customer support provided by the tool.

Legal

- **Privacy & Security:** Ensure the tool protects sensitive info & complies with privacy regulations.
- **Copyright:** Be aware of any legal implications with copyright infringement.
- **Attribution:** Cite & reference the AI tool when used & where necessary.

Modified from 1. Allohyan, Mehdi & Pourniyeh, Seyedamin & Assefi, Mehdi & Safaei, Saeid & Trippe, Elizabeth & Gutiérrez, Juan & Kochut, Krystyna. (2017). Text Summarization Techniques: A Brief Survey. International Journal of Advanced Computer Science and Applications (IJACSA), 8, 397-405. 10.14569/IJACSA.2017.081052. 2. Das, Dipanjan & Martins, André. (2007). A survey on automatic text summarization. 3. Lu, Sid & Zhu, Yaoming & Zhang, Weinan & Wang, Jun & Yu, Yong. (2018). Neural Text Generation: Past, Present and Beyond. and 4. Shi, Tian et al. "Neural Abstractive Text Summarization with Sequence-to-Sequence Models." ACM Transactions on Data Science 2 (2018): 1 - 37.

Use Variability



CITE & REFERENCE AI-GENERATED CONTENT ²⁴

Format (MLA):

"Description of chat" prompt. *Name of AI tool*,
version of AI tool, Company, Date of chat, URL.

In-Text Citation Example:

("Examples of harm reduction initiatives")

Reference Example:

"Examples of harm reduction initiatives" prompt.
ChatGPT, 4.0, OpenAI, 28 Mar. 2024, chat.openai.com/chat.

- August 2023 refusal to register a "bedrock re
 - Disputes will be sufficient to be
 - August 2023 a variety of AI
 - **Currently (Mar 25'), AI-generated content is not eligible for U.S. copyright protection.**
- right Office's authorship is
- ed content is
- comments on

The Dilemma in Referencing AI

- **Differing Views:** Tool vs. source—some cite, some don't.
- **Key Dilemmas:** Topics, outlines, rewording—where's the line?
- **Ethics & Trust:** Transparency builds credibility.
- **Practical Guidance:** Follow policies, disclose when impactful.
- **Case-by-Case:** Minor input? Likely no need. Major role? Cite.

+ a Prescription

A Prediction for AI in Dietetics

RD & NDTR Role(s) in the Age of AI

Advanced

Intermediate

Entry

scope & standards^{25,26}



- Specializations
- Research & QI
- Policy & Advocacy
- Program Development
- Leadership & Management
- Education & Counseling
- Collaborations

Focus on AI Implications^{27,28}

Bias

fairness & equity

Explainability

trust & regulation

Accountability & Accuracy

RDN & NDTR integrity

Security

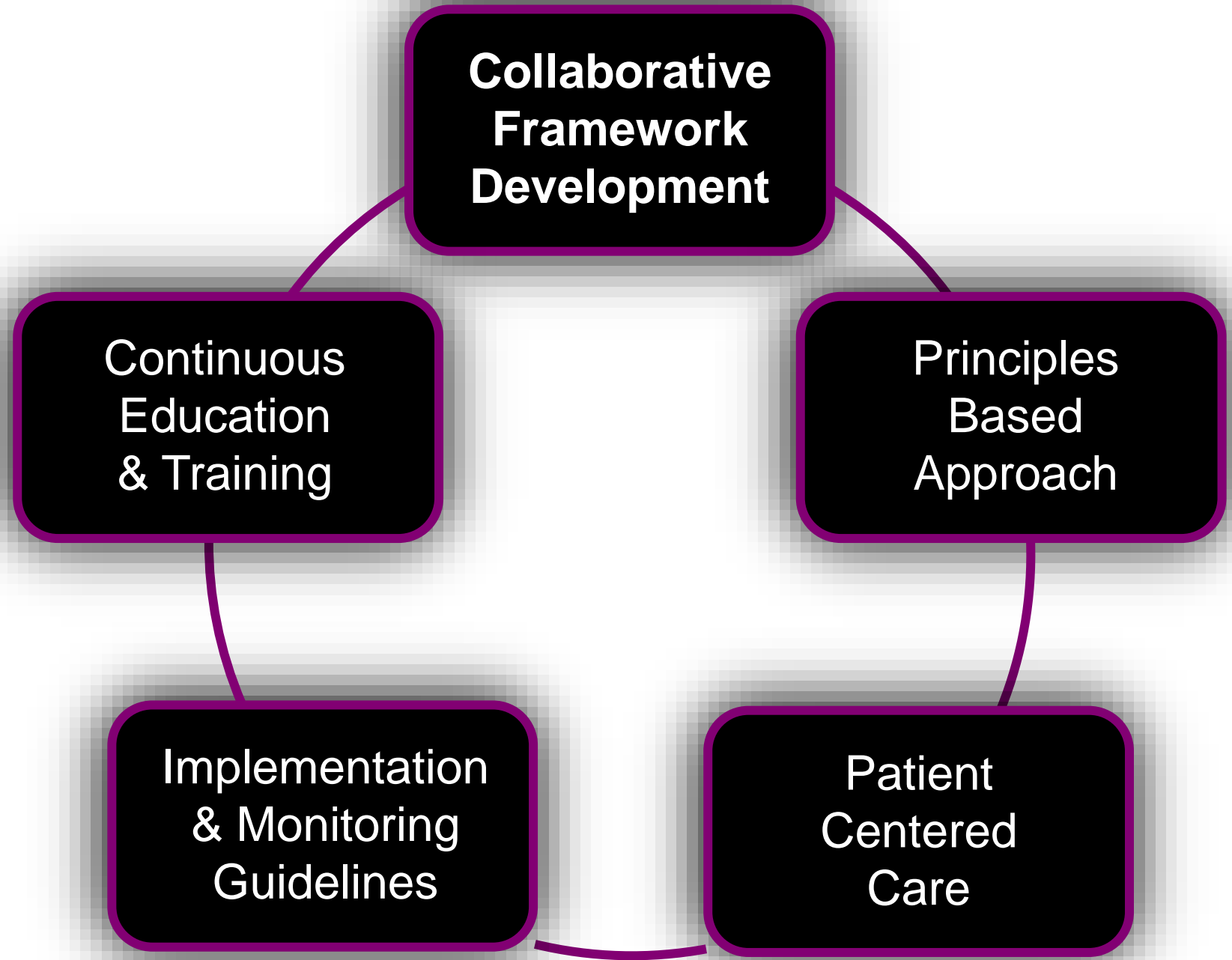
data protection & system integrity

Transparency

trust & responsibility



Image generated with ChatGPT 4.0 using the prompt "registered dietitians using AI."



Planning for Responsible AI Integration & Use

Building a Collaborative Framework for AI Implementation²⁹



IT
Department



Data
Security
Officer



Practice
Manager



Research &
Development
Team



Legal &
Compliance
Department



Professional
Development
Coordinator

Focusing on Output Quality, Transparency & Accountability³⁰⁻³²

Critical Review &
Decision Making
Authority

Data Training

Stakeholder
Communications

Consent,
Disclosures &
Documentation

Feedback Loop,
Monitoring &
Evaluation

Continuing
Education

Supporting Students for an AI Included Profession



Raul Palacios, MS, RDN, LD

DPD Director, Lecturer
Texas Tech University

“ With AI, I can create better case studies & patient care simulations to enhance student learning. I can spend less time on routine mundane tasks & more time on the human side of education. Teaching our students to leverage AI in their future practice will better prepare them for an ‘AI-Everywhere’ world. ”

We Need to Build AI Acumen³⁴

Follow AI in Healthcare Experts

- *Dr. Bertalan Mesko* | *MedicalFuturist.com, LinkedIn*
- *Dr. Eric Topol* | *LinkedIn*
- *Dr. Harvey Castro* | *LinkedIn*
- *Tom Lawry* | *TomLawry.com, LinkedIn*
- *Jan Berger* | *LinkedIn*

Add Relevant Resources to Your Reading List

- *Hacking Health Care: How AI and the Intelligence Revolution Will Reboot an Ailing System*
- *Blueprint for Trustworthy AI Implementation Guidance & Assurance for Health Care*

Consider Enrolling in AI Training & Certification Offerings

- *American Board of Artificial Intelligence in Medicine*
- *Coursera, LinkedIn Learning, edX, Google AI*

Engage in AI Discussions with fellow RDs: *AI Powered Nutrition* on Facebook

Use the [*GenAI Chatbot Prompt*] Handout

An Additional Role in the Age of AI

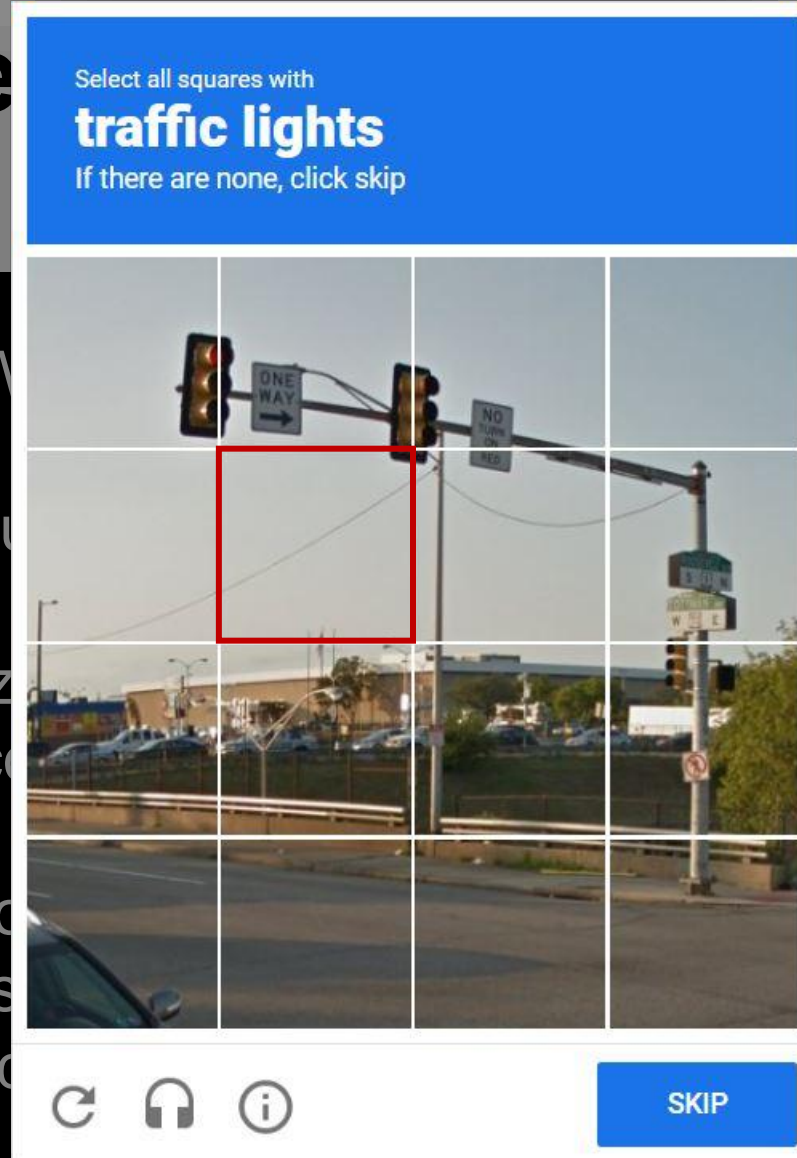
We need to be involved where & when AI nutrition tool selection or ideation & development happen, as well as during implementation, use, & monitoring.

- Ensure the AI nutrition tool follows scientific principles.
- Offer & support expertise for personalized, evidence-based, safe, accurate, and non-biased guidance.
- Communicate how RD involvement builds credibility & consumer trust.

Communicate

& Implications

- “GPT Prompts: Ya Get W
- Known to produce inaccur
- Lack of highly personaliz
& emotional support in c
- Expert validation, collabor
needed during interest, s
implementation, use, and



- **Potential impact on critical thinking**

Zain Kahn (in)

tldr.tech/ai newsletter | [Superhuman.ai](https://superhuman.ai) newsletter | jamanetwork.com/channels/ai

Facebook group: AI Powered Nutrition

Questions?



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Curves in the Curriculum



Time to Vote!

Pressing Educator Questions – Part 1

1. What specific activities or projects can help students **improve their critical thinking and problem-solving skills** in relation to AI in dietetics?
2. How can educators **ensure that digital and data literacy are incorporated across different aspects of dietetics training**, not just technology-focused rotations?

What specific activities or projects can help students **improve their critical thinking and problem-solving skills** in relation to AI in dietetics?

- Instruct students to **use a genAI tool to create a meal plan, then assess the results**. They could focus on evaluating nutritional accuracy, adequacy, practicality, and cultural appropriateness.
- Assign students to **critically evaluate AI tools used in dietetics**, such as nutrient tracking apps, virtual nutrition counseling platforms, or predictive tools for dietary recommendations.
- Ask students to **analyze datasets** (e.g. dietary patterns, disease prevalence) using a simple AI or machine learning tool, and **identify potential biases in the data or algorithms**.
- Students can **use data-driven software to predict trends in public health nutrition** (e.g., rising obesity rates, micronutrient deficiencies). Their task is to **interpret the results and create actionable recommendations** based on the predictions.
- Have a group of students use an AI-generated script for nutrition counseling, while another follows a human-generated script. The class then **critically evaluates potential in/effectiveness and rationale**.

How can educators **ensure that digital and data literacy are incorporated across different aspects of dietetics training**, not just technology-focused rotations?

- Incorporate **data analysis** in nutritional assessment
- Apply **data collection and interpretation** in community outreach
- Embed **data tracking in menu planning** or food service rotations
- Promote **use of health informatics** in medical nutrition therapy (MNT)
- Incorporate **mobile health apps** in outpatient counseling
- Implement **quality improvement (QI) projects using digital tools**
- Encourage **digital storytelling** for patient education

Statistics Canada
Data Literacy Training
Learning Catalogue

Time to Vote!

Pressing Educator Questions – Part 2

1. What are some effective ways for educators to teach dietetic students about the ethical implications of AI in nutrition?
2. What role do organizations play to help dietetic students prepare for an AI-included field of dietetics?

What are some effective ways for educators to **teach dietetic students about the ethical implications of AI in nutrition?**

- Work through case studies on **ethical dilemmas**
- Apply the **B.E.A.S.T. framework** (or create an ethics checklist) to evaluate tools
- Ethical **debates on AI use** (benefits, risks) in practice
- Role-playing scenarios with **patient consent & data privacy**
- Evaluating **bias and cultural sensitivity** in AI tools
- **Guest speakers** on AI
- **Reflective journals** on AI

What role do organizations play to **help dietetic students prepare for an AI-included field of dietetics?**

- Creating **forums** for AI-driven discussion & knowledge exchange
- **Competency development** in AI and technology
- **Advocacy** for AI-related policies in healthcare
- **Networking and mentorship** opportunities
- Promoting **research** and evidence-based AI applications
- Establishing **ethical guidelines** for AI use
- Providing educational **resources and training** programs



AI in Education ³³

AI Blurs Traditional Authorship & Plagiarism Boundaries

GenAI challenges conventional definitions of originality & plagiarism, making it difficult to define where human input ends and AI influence begins.

Ethical & Practical Challenges in Citation

Standard citation styles struggle to address complex AI-assisted writing, where hybrid authorship & iterative AI input create new attribution dilemmas.

Diverse Faculty Perspectives on AI in Academia

Educators are divided on AI's role in student work, with some viewing it as a useful tool and others seeing it as a threat to academic integrity & critical thinking development.