Available online at https://www.gyanvihar.org/researchjournals/ctm_journals.php
SGVU International Journal of Convergence of Technology and Management
E-ISSN: 2455-7528
Vol.12 Issue 1 Page No 203-220

Artificial Intelligence Tools in Practice: A Cross-Disciplinary Review and Under Representation in Nutrition: A Future Scope

[1*] Raji R,[2] Shri Krishna Mishra, [3] Jubilant J Kizhakkethottam, [1] Sankar Ganesh S, [1] Venkitachalapathy K

[1] Research Scholar, Computer Science Department, Suresh Gyan Vihar University, Jaipur, Rajasthan
[2] Assistant Professor, Mechanical Engineering Department, Suresh Gyan Vihar University, Jaipur, Rajasthan
[3] Professor, Computer Science Department, SRM Institute of Science & Technology, Trichy

Email: raji.23183945@mygyanvihar.com

Abstract

Artificial Intelligence (AI) has become integral part of our daily life. It has made its remarkable contribution in content generation to health care. This paper identifies remarkable potential of AI across various domains by a systematic review and cross disciplinary analysis of existing tools. The objective of this study is to identify various existing AI tools, categorize them, evaluate their performance through various parameters focusing mainly at identifying contribution of AI in Nutritional Science. This study involves a multi stage methodology comprising qualitative and quantitative methods such as literature survey, tool categorization, feature evaluation, performance measuring etc. The analytical methods such as score matrices, feature based comparison etc. are also implemented during performance analysis. The findings reveal that though AI has made significant contribution in education, marketing, automation etc., its contribution in Nutritional Science which is closely related to human life is minimal. Though there exists few AI Tools like HealthifyMe, Eat this much, Fastic etc., their contribution in personalized nutrition is very low. The detailed analysis shows that they usually provide generalized solutions rather than personalized solutions. This study conveys that various existing diet generation tools were developed before 2019 which highlight that they do not integrate the latest advanced AI technologies like Generative AI, AI agent, Generative Adversarial Network (GAN) etc. The growing prevalence of life style related diseases in the society has forced the need for an intelligent diet management system. To address all these gaps, the authors proposes an application *NutriGen AI* - Healthify the future based on *REGM architecture*. The proposed system extends application level of AI in Personalized Nutrition. The paper highlights the potential of proposed *REGM* architecture -consisting of *Recognizer, Evaluator, Generator, Motivator* modules that can provide data driven, adaptive, motivational diet suggestions. The study concludes that integrating AI in Nutrition can enhance human well-being, and can bring out new direction for application of AI in diet generation.

Keywords: Artificial Intelligence (AI), Personalized Nutrition, Natural Language Processing (NLP), Tool categorization, Learning.

1. Introduction

The rapid advancement of Artificial Intelligence (AI) over the last decade has transformed multiple domains, including healthcare, education, design, automation, and data-driven decision-making [1], [2], [3], [4]. Modern AI systems particularly those powered by machine learning, deep learning, multimodal processing, and large language models enable sophisticated capabilities such as image recognition, language understanding, predictive analytics, and personalized recommendations [5], [6], [7]. With the emergence of generative AI and transformer-based architectures, tools such as ChatGPT, Claude, Gemini, and other domain-specific models have expanded the potential of AI for content creation,

Correspondence to: Raji R*, Department of Computer Science, Suresh Gyan Vihar University, India*
*Corresponding author. E-mail addresses:*raji.23183945@mygyanvihar.com

Available online at https://www.gyanvihar.org/researchjournals/ctm_journals.php
SGVU International Journal of Convergence of Technology and Management
E-ISSN: 2455-7528
Vol.12 Issue 1 Page No 203-220

research assistance, virtual coaching, and complex reasoning tasks [8], [9], [10]. Despite these advancements, the application of AI in nutrition, dietary assessment, and personalized diet planning remains comparatively underdeveloped. Existing diet and fitness applications primarily depend on rule-based recommendations, static meal templates, and manual food logging, offering general guidance rather than personalized nutritional solutions [11], [12]. Recent studies emphasize the need for AI-driven nutrition systems capable of integrating multimodal inputs, behavioral analytics, and adaptive reasoning to improve personalization and dietary adherence [13], [14]. Moreover, most diet-generation systems were developed before the emergence of modern large language models and therefore lack advanced architectures capable of real-time adaptation, multimodal reasoning, and generative recommendations [15], [16]. These limitations highlight the need for next-generation nutrition frameworks that incorporate retrieval-based reasoning, image-based nutrient estimation, and generative AI–enabled feedback mechanisms. In response to these challenges, this study presents **NutriGen AI**, a conceptual application built on the (**REGM architecture Recognizer, Evaluator, Generator, and Motivator)** designed to integrate advanced reasoning, multimodal analysis, and adaptive generative capabilities to provide personalized dietary recommendations [17]. The objective of this study is to evaluate existing AI tools, identify technological gaps, and propose a modernized framework for nutrition-focused AI. The structure of this paper is as follows: Section 1 provides the basis of the paper as Introduction, Section 2 examines various existing review papers on AI tools, Section 3 defines methodology & systematic categorization based on underlying technology, Section 4 Summarizes Results & Discussions, Section 5 discusses future directions by suggesting REGM based model, section 6 discusses challenges & limitation and finally section 7 concludes the paper.

2. Literature Review

Artificial Intelligence (AI) has seen extensive application in domains such as content generation, education, marketing, and automation, driven by rapid progress in large language models (LLMs), multimodal architectures, and agent-based systems [1], [2], [3]. Despite this growth, the adoption of AI in nutritional science remains relatively low, with only a few systems addressing personalized diet planning or lifestyle management [4], [5]. Commercial diet applications, including HealthifyMe, Eat This Much, and Fastic, largely provide generalized recommendations, highlighting their limited ability to deliver deeper personalization [6], [7]. Many existing diet recommendation systems were developed prior to 2019, suggesting that they do not fully incorporate recent advancements in AI, such as generative models, agentic workflows, or multimodal reasoning [8], [9]. Traditional AI-based diet and nutrition systems primarily rely on rule-based engines or classical machine learning models. While these approaches provide basic recommendations, they often overlook behavioral, emotional, and motivational dimensions that are essential for long-term adherence [10], [11]. Personalization has been shown to significantly improve adherence to dietary guidelines. AI systems that adapt recommendations based on individual preferences, health conditions, lifestyle, and demographics enhance user engagement and effectiveness [12], [13]. Multi-module AI frameworks, integrating modules such as Recognizer, Evaluator, Generator, and Motivator, have been suggested to improve personalization and recommendation accuracy [14], [15]. Generative AI and multimodal approaches enable interactive and adaptive diet planning by incorporating text, images, and behavioral feedback, offering richer user experiences than traditional systems [16], [17]. Agentic AI systems, capable of autonomously executing tasks and monitoring progress, show promise for continuous dietary guidance and adaptive interventions [18], [19]. While numerous AI tools exist for general health and fitness tracking, very few are specifically tailored for nutrition personalization, indicating a gap between technology development and practical application in dietetics [20], [21]. Integration of behavioral analytics and motivational support within AI diet systems has been shown to enhance long-term adherence, demonstrating the importance of moving beyond static recommendations [22], [23]. Combining AI-driven diet recommendations with IoT-based monitoring systems can further improve accuracy and engagement, offering real-time feedback and adaptive guidance for personalized nutrition management [24], [25], [26]. This study reviewed existing AI tools, highlighting their broad capabilities and growing impact across domains. The gaps identified during this study collectively indicate that contribution of AI in various domains is large where as its contribution in nutrition is minimal. Hence, the next step will focus on identifying role of AI in nutrition, exploring how it can enhance personalized diet

Correspondence to: Raji R*, **Department of Computer Science**, **Suresh Gyan Vihar University, India***
*Corresponding author. E-mail addresses:*raji.23183945@mygyanvihar.com

Available online at https://www.gyanvihar.org/researchjournals/ctm_journals.php
SGVU International Journal of Convergence of Technology and Management
E-ISSN: 2455-7528
Vol.12 Issue 1 Page No 203-220

planning and promote better health outcomes. Therefore, this study moves forward with the objective of proposing a novel AI-based system to bridge this underexplored research area.

2.1 Research Gap

- Despite the rapid advancement of AI in various domains such as content generation, education, marketing, and automation, its application in personalized nutrition and diet planning remains limited. Existing commercial diet-related applications like HealthifyMe, Eat This Much, and Fastic primarily provide generalized recommendations and do not fully leverage recent AI advancements such as large language models, multimodal reasoning, or agent-based workflows.
- This study reveals that most of the existing diet related applications were developed before 2019 and hence lack integration of modern AI technologies.
- Most of the current AI-based diet and nutrition systems rely on rule-based engines or conventional machine learning models and fail to incorporate behavioral, emotional, and motivational factors, which are essential for long-term adherence. Additionally, integration of real dietary tracking, generative AI models, and personalized feedback mechanisms is still limited.
- While AI tools have improved literature review automation, educational applications, and predictive wellness systems, there remains a gap in developing comprehensive multi-module frameworks that combine recognition, evaluation, generation, and motivation for fully personalized diet management. Emerging chatbot-based and LLM-augmented diet recommender systems show promise, but their implementation in real-world personalized nutrition is still nascent.

2.2 Objectives of study

The primary objective of this study was to analyze, categorize, and evaluate existing Artificial Intelligence (AI) based tools across multiple domains and to identify the underrepresentation of AI applications within the field of nutrition. To achieve this aim, the study is guided by the following objectives:

- To conduct a systematic review and categorization of existing AI tools across various domains such as education, automation, content creation, healthcare, and nutrition.
- To analyze and compare performance metrics including accuracy, usability, scalability, and innovation of existing AI tools to identify the best-performing systems in each domain.
- To examine the research gap related to the application of AI in nutritional science and health management.
- To highlight the future role of AI in enabling personalized dietary recommendation systems that promote healthy lifestyles and prevent nutrition-related diseases.

3. Methodology

This section serves as backbone of this study.

Table 1: **The structured six-step followed in research methodology**

Step1: A comprehensive review of existing literature was conducted by identifying articles, reports and other existing resources.
Step2: The various under lying and existing AI tools were identified and were grouped based on their functionality.
Step3: Various evaluation criterias were selected like performance, cost, usability, application domain etc. Some scoring matrices were used for evaluating these tools.
Step4: This phase deals with analyzing performance. This was done through performance metrics, user feedback,

Correspondence to: Raji R, ***Department of Computer Science, Suresh Gyan Vihar University, India***
*Corresponding author. E-mail addresses:*raji.23183945@mygyanvihar.com

Available online at https://www.gyanvihar.org/researchjournals/ctm_journals.php
SGVU International Journal of Convergence of Technology and Management
E-ISSN: 2455-7528
Vol.12 Issue 1 Page No 203-220

analyzing strength and limitation etc.
Step5: The results obtained were integrated into comparative tables and visual summaries in the form of graphs.
Step 6: The gaps were noted, which gives area of innovation in future.

Table 2: An overview of different categories of AI Tools & examples

S.NO	Category	Number of Tools	Examples
1	AI Assistants	4	ChatGPT, Grok, Claude, Gemini
2	Video Generation	3	Synthesia, Google Veo, OpusClip
3	Image Generation	3	Nano Banana (Imagen Editor), GPT-4o, Midjourney
4	Meeting Assistants	2	Fathom, Nyota
5	Automation	2	n8n, Manus
6	Research	2	Deep Research, NotebookLM
7	Writing	2	Rytr, Sudowrite
8	Search Engines	3	Google AI Mode, Perplexity, ChatGPT search
9	Graphic Design	2	Canva Magic Studio, Looka
10	App Builders & Coding	2	Lovable, Cursor
11	Knowledge Management	2	Notion Q&A, Guru
12	Email	3	HubSpot Email Writer, Fyxer, Shortwave
13	Scheduling	2	Reclaim, Clockwise
14	Presentations	2	Gamma, Copilot for PowerPoint
15	Resume Builders	2	Teal, Kickresume
16	Voice Generation	2	ElevenLabs, Murf
17	Music Generation	2	Suno, Udio
18	Marketing	2	AdCreative, AirOps
19	Sales	1	Attio
20	Diet Generator	3	Healthify Me, Eat this much, Fastic

This study adopts a structured multi stage methodology based on qualitative and quantitative technique. Qualitative involves an in-depth review of literature, technical reports, and official documentation of AI tools. The quantitative approach involves comparative analysis based on performance metrics, real world application etc. As presented in **Table 1**, the research methodology follows a structured six-step process encompassing literature review, tool categorization, comparative analysis, data synthesis, and identification of future research directions. As illustrated in **Table 2**, the identified AI tools are grouped into different categories along with representative examples to provide a comprehensive overview of their functional diversity. **Figure 1**, the graphical representation highlights the distribution of various AI tools across multiple categories, illustrating their relative presence and functional diversity.

Correspondence to: Raji R*, **Department of Computer Science**, **Suresh Gyan Vihar University, India***
*Corresponding author. E-mail addresses:*raji.23183945@mygyanvihar.com

Available online at https://www.gyanvihar.org/researchjournals/ctm_journals.php
SGVU International Journal of Convergence of Technology and Management
E-ISSN: 2455-7528
Vol.12 Issue 1 Page No 203-220

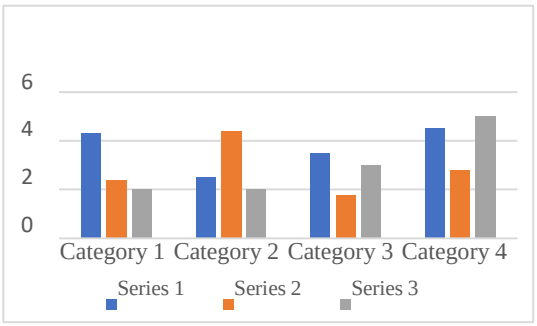


Figure 1: Graphical Representation of various AI Tools under various categories

Artificial Intelligence has evolved into a vast ecosystem of specialized tools designed to enhance productivity, creativity, and decision-making etc. These tools can be categorized into areas such as AI assistants, video-generation tools, image-editing tools, and much more. Classifying AI tools into such categories helps in understanding their capabilities and selecting the right technology for specific needs. **Figure 2** shows such a classification of some of the existing AI tools closely related to human life.

Meeting Assistants

Fathom	Nyota
Developed by Fathom Plugin for real-time note-taking Automatically identifies key decisions Architecture: Multi-modular system using LLMs and cloud backend, Free and paid versions available	Developed by Nyota AI Ltd AI-powered meeting summary and management tool Architecture: Microservices-based system Paid version only

Diet Generation

Correspondence to: Raji R*, **Department of Computer Science**, **Suresh Gyan Vihar University, India***
*Corresponding author. E-mail addresses:*raji.23183945@mygyanvihar.com

Available online at https://www.gyanvihar.org/researchjournals/ctm_journals.php
SGVU International Journal of Convergence of Technology and Management
E-ISSN: 2455-7528
Vol.12 Issue 1 Page No 203-220

HealthifyMe
Developed by HealthifyMe wellness private limited. Free and paid version available
Architecture uses NLP, ML, Developed in 2011,
Widely used fitness and health application

Eat this Much
Developed by Eat this much Inc. Ltd
Free and paid version available, developed in 2012 Architecture uses NLP, ML
Help in automated meal planning

Fastic
Developed by HealthVida GmbH & Co. KG., Multi layered, data driven architecture
Support intermittent fasting, Developed in 2019
Supports intermittent fasting and lifestyle monitoring

Graphic Design

Canva Magic studio	Developed by Canva Inc. Most popular, easy to use design tool Features magic edit, magic grab, magic media etc. A hybrid technical architecture is used. Free and paid versions available
Looka	Is an AI branding and design platform developed by Looka, Inc. Airbnb property management, digital marketing agency. Paid version available Architecture is centered around proprietary artificial intelligence and machine learning models

Video Generation

Synthesia
From Synthesia.io
Create realistic AI human avatar videos, Customize avatars
Free and paid versions available. Use multiple models.

Google Veo
From Google Deep Mind
Create high definition 1080p videos Free and paid version available
Use Latent Diffusion Transformer Architecture

OpusClip
From Opus AI Inc.
It finds best part in a long video, break it into clips Create eye catching content from videos.
Multi modal architecture (NLP, Computer vision etc.)

Correspondence to: Raji R, ***Department of Computer Science, Suresh Gyan Vihar University, India***
*Corresponding author. E-mail addresses:*raji.23183945@mygyanvihar.com

Available online at https://www.gyanvihar.org/researchjournals/ctm_journals.php
SGVU International Journal of Convergence of Technology and Management
E-ISSN: 2455-7528
Vol.12 Issue 1 Page No 203-220

AI Assistants

Chat GPT
From OpenAI, can upload and analyze files
Summarize, analyze, and extract data, we can get insights from raw data Free, premium version exists
Model-Generative Pre-Trained Model

Grok
Conversational AI from XAI Integrate witty, humorous responses
Can process real time data
Only premium version available, MoE (Mixture of Experts)

Gemini
From Google, Top most AI Assistant
Support 1 million tokens of context Great feature: audio overview
Free and paid version, Transformer architecture with multi-modality

Claude
From Anthropic, Chatting, content generation etc. Limited features in free version
Use transformer architecture

Image Generation

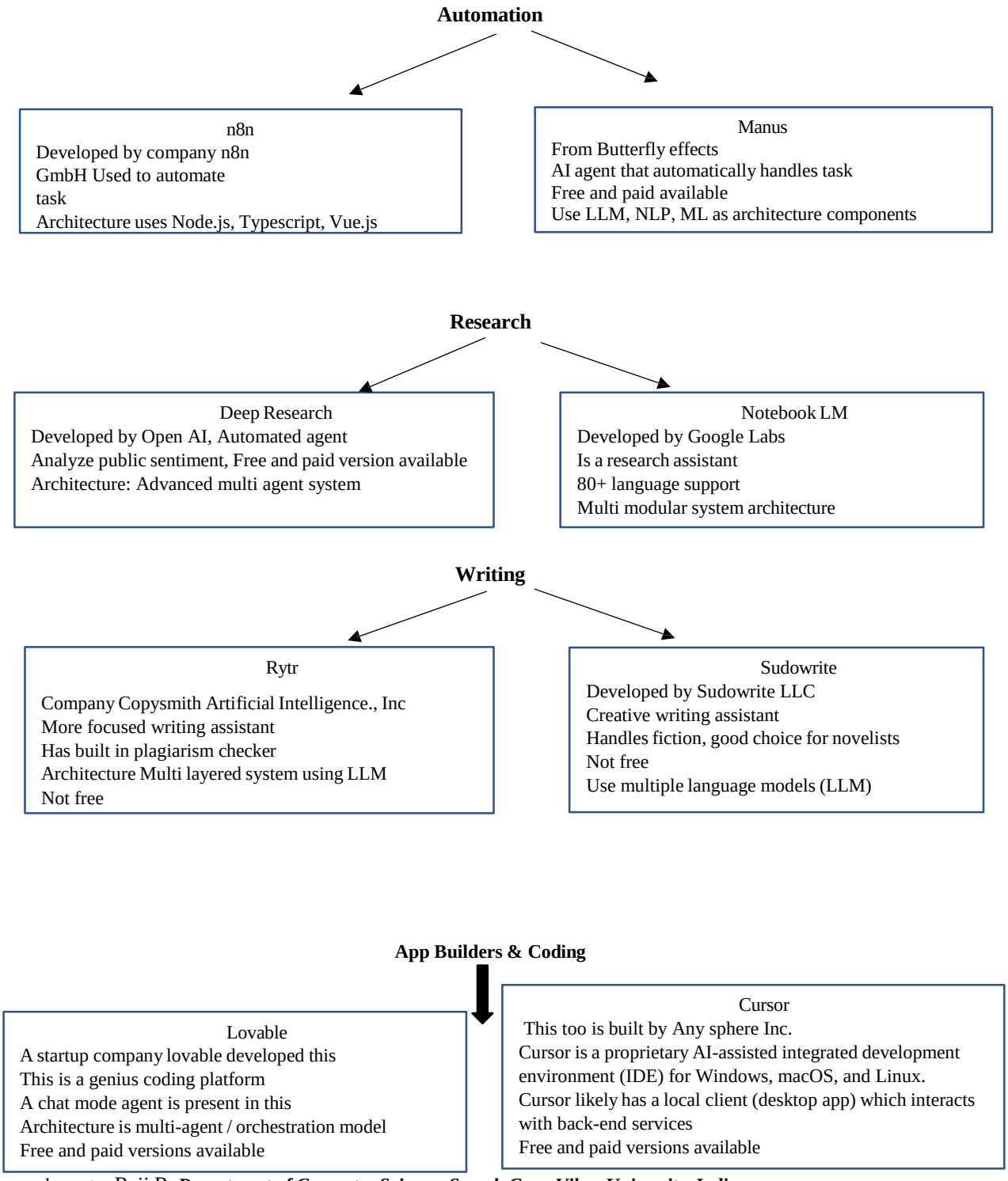
Nano Banana
From Google
Image editing, contextual scene filling, not free
Use natively multi model diffusion model

GPT-4o
From OpenAI
Text to image and image to text conversion
Respond to audio in 232 ms, free and paid version available.
Use transformer architecture, understand emotion tone

Midjourney
From Midjouney.Inc. No free plan
Create aesthetic, artistic images
Architecture is Generative AI based on diffusion model.

Correspondence to: Raji R*, **Department of Computer Science**, **Suresh Gyan Vihar University, India***
*Corresponding author. E-mail addresses:*raji.23183945@mygyanvihar.com

Available online at https://www.gyanvihar.org/researchjournals/ctm_journals.php
SGVU International Journal of Convergence of Technology and Management
E-ISSN: 2455-7528
Vol.12 Issue 1 Page No 203-220



Correspondence to: Raji R*, **Department of Computer Science**, **Suresh Gyan Vihar University, India***
*Corresponding author. E-mail addresses:*raji.23183945@mygyanvihar.com

Available online at https://www.gyanvihar.org/researchjournals/ctm_journals.php
SGVU International Journal of Convergence of Technology and Management
E-ISSN: 2455-7528
Vol.12 Issue 1 Page No 203-220

Search Engines

Google AI Mode	From Google Support surface level search It gives most likely answer Uses Retrieval-Augmented Generation (RAG) Currently free
Perplexity	AI powered answer engine Perplexity was developed by Perplexity AI, Inc. Support real time web search Uses multi language models, LLM Gives up to date answers Free and paid versions available
Chat GPT Search	ChatGPT, developed by OpenAI It remembers our previous interactions in context GPT-4o (optimized) model Free and paid versions available

Knowledge Management

Notion Q&A
The Q&A tool is developed by Notion Labs, Inc.
Notion can pull answers from other connected external tools, including
Google Drive, GitHub, and Zendesk.
It gives you direct answers
Free and paid versions available, Architecture-LLM model

Guru
The company **is** Guru Technologies, Inc.
Guru is a knowledge
RAG-style model**:** retrieve relevant knowledge + generate answers or
suggestions + serve them in context
Free and paid versions available

Marketing

AdCreative
Is an AdCreative platform for Facebook, Instagram etc.
We just need to give product name, target audience we will get the ads.
The company developed this is AdCreative ai
The architecture involved is Technical/ML architecture

AirOps
This was developed by Gartner
This is a content operation engine
Makes learning process easier
Uses architectures GPT3, GPT4, Claude etc.
Architecture is built on LLM, NLP

E mail

HubSpot Email Writer
Developed by HubSpot, Inc.
AI-powered email assistant
HubSpot's AI email writer links with the platform's CRM database.
Generate email drafts quickly
Architecture include User Interface / Editor, Prompt + Content Generation Engine (LLMs)

Correspondence to: Raji R*, **Department of Computer Science**, **Suresh Gyan Vihar University, India***
*Corresponding author. E-mail addresses:*raji.23183945@mygyanvihar.com

Available online at https://www.gyanvihar.org/researchjournals/ctm_journals.php
SGVU International Journal of Convergence of Technology and Management
E-ISSN: 2455-7528
Vol.12 Issue 1 Page No 203-220

Fyxer
Developed by Fyxer AI company
Fyxer is a fast-growing AI executive assistant
it automatically categorized my incoming emails into folders
it can suggest draft responses, includes an AI meeting note taker
Fyxer's architecture is built on a "stateless" serverless design
Free and paid versions available

Shortwave
Developed by Short wave
Shortwave is an AI email assistant that helps you organize, write, search, and schedule emails.
Good email organization capability
Built around multi model agentic AI system.

Scheduling

Reclaim
AI powered scheduling assistant
Automatically manage tasks, meeting
It finds optimal meeting timing based on availability of others.
Developed by Reclaim.ai.inc
The architecture is cloud based architecture.
Free and paid versions available

Clockwise
AI powered scheduling assistant
Developed by clockwise Inc.
Runs on AWS
The architecture lies on NLP and proprietary scheduling
Free and paid versions available

Presentations

Gamma
Most popular presentation tools
We can create presentations by prompting
Developed by Gamma Tech, Inc.
The architecture includes NLP, ML etc.
Free and paid versions available

Copilot
Generate presentation
Microsoft 365 Copilot, GitHub Copilot
Architecture is Open AI Codex
Free and paid versions available

Resume Builders

Correspondence to: Raji R*, **Department of Computer Science**, **Suresh Gyan Vihar University, India***
*Corresponding author. E-mail addresses:*raji.23183945@mygyanvihar.com

Available online at https://www.gyanvihar.org/researchjournals/ctm_journals.php
SGVU International Journal of Convergence of Technology and Management
E-ISSN: 2455-7528
Vol.12 Issue 1 Page No 203-220

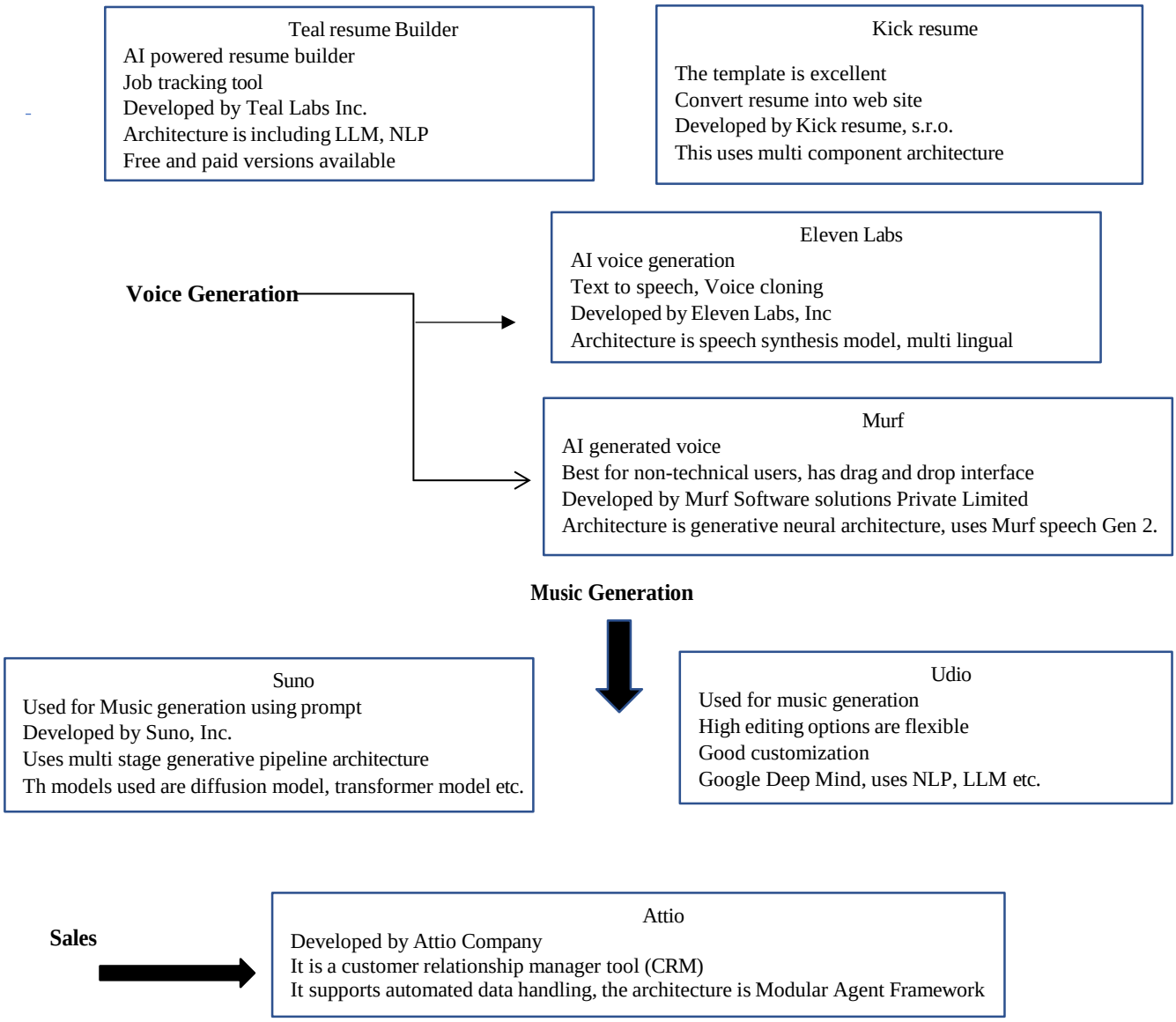


Figure 2: Feature analysis of selected AI Tools

4. Results & Discussion

This study deals with identifying various existing AI tools and categorizing them under different classifications. During analysis, the functionality of these tools was evaluated in terms of architecture, accuracy, cost, and overall performance. The findings revealed that while AI tools in domains such as image generation, video generation, and entertainment are extensively explored, the existence and advancement of AI tools in diet generation remain largely unnoticed. This document integrates these observations with previous research to highlight the research gap and emphasize future scope.

Correspondence to: Raji R, ***Department of Computer Science, Suresh Gyan Vihar University, India***
*Corresponding author. E-mail addresses:*raji.23183945@mygyanvihar.com

Available online at https://www.gyanvihar.org/researchjournals/ctm_journals.php
SGVU International Journal of Convergence of Technology and Management
E-ISSN: 2455-7528
Vol.12 Issue 1 Page No 203-220

Future research should focus on developing nutrition-specific AI frameworks to address this gap. To achieve this vision, the study proposes a novel application, *NutriGen AI – Healthify the Future*, designed to measure the application level of AI in managing lifestyle diseases and to advance data-driven nutritional science. **Table 3** presents a systematic identification and classification of well-known AI tools, along with a manual evaluation of their selected features. This table includes qualitative insights that help users select the best-performing tools according to their requirements. The inference obtained from this study indicates that all the existing AI tools related to diet generation were developed before 2015 [1], [2], and therefore do not integrate modern AI advancements. This presents clear scope and opportunities for research in assessing the application level of AI in personalized nutrition. In this paper, the authors address these identified gaps by proposing *NutriGen AI*, an AI application integrating advanced and contemporary technologies to support the development of a healthier future generation.

Table 3: Performance evaluation using different parameters

Tool	Accuracy	Usability	Scalability	Cost Efficiency	Integration	Innovation	Qualitative Note
AI Assistants							
Chat GPT	5	5	5	3	5	5	Strong general- purpose Large Language Model (LLM), widely integrat
Grok	4	3	4	2	3	4	Conversational style with humor and real-time signals; premium.
Claude	5	4	4	3	4	4	Safety-focused assistant; strong alignment features.
Gemini	5	5	5	4	5	5	High multimodal capacity and deep Google integration.
Video Generation							
Synthesia	4	5	4	3	4	4	Easy avatar creation for marketing and e- learning.
Google Veo	4	4	5	3	4	5	High-quality video generation; research-grade.
Opus Clip	4	5	4	4	4	4	Automated clip extraction and repurposing from long videos.
Image Generation							
Nano Banana	4	4	4	3	3	4	Image editing
GPT-4o (image)	5	5	5	4	5	5	Strong multimodal reasoning and image tasks.
Midjourney	4	4	4	3	3	5	Artistic outputs; popular with designers.
Meeting Assistants							
Fathom	4	5	4	4	4	4	Real-time meeting summaries and action extraction.
Nyota	4	4	4	4	3	3	Meeting summary management; enterprise features.
Automation							
n8n	3	4	5	5	5	3	Low-code automation; very integrative.
Manus	4	4	4	3	4	4	Automates tasks using LLM agents.

Correspondence to: Raji R*, **Department of Computer Science**, **Suresh Gyan Vihar University, India***
*Corresponding author. E-mail addresses:*raji.23183945@mygyanvihar.com

Available online at https://www.gyanvihar.org/researchjournals/ctm_journals.php
SGVU International Journal of Convergence of Technology and Management
E-ISSN: 2455-7528
Vol.12 Issue 1 Page No 203-220

Research							
Deep Research	4	4	4	3	4	4	Automated research assistant and analytics.
Notebook LM	4	5	4	3	4	4	Notebook- style assistant with wide language support.
Writing							
Rytr	4	5	4	4	4	3	Quick copy generation for marketing and blogs.
Sudo write	4	4	4	3	3	5	Strong for fiction writers and creativity.
Search Engines							
Google AI Mode	5	4	5	4	5	4	Integrated with Google search and RAG features.
Perplexity	5	4	4	3	4	4	Concise answers with sources; good for research.
ChatGPT Search	5	4	4	3	4	4	Chat interface with web retrieval capabilities.

Diet Generation Tools							
Healthify Me	5	5	4	5	5	5	General Use
Eat This Much	4	4	4	4	5	4	Chat bot, diet generation etc.
Fastic	4	4	3	3	4	3	Intermittent fasting
Graphic Design							
Canva Magic Studio	4	5	4	5	5	4	Accessible design workflows with AI boosts.
Looka	3	5	4	4	4	3	Branding and logo generation for SME s
App Builders & Coding							
Lovable	4	4	4	3	4	4	AI-assisted app building with agents.
Cursor	4	5	4	3	4	4	AI IDE with privacy modes for developers.
Knowledge Management							
Notion Q&A	4	5	4	4	5	4	In-app Q&A from workspace content.

Correspondence to: Raji R*, **Department of Computer Science**, **Suresh Gyan Vihar University, India***
*Corresponding author. E-mail addresses:*raji.23183945@mygyanvihar.com

Available online at https://www.gyanvihar.org/researchjournals/ctm_journals.php
SGVU International Journal of Convergence of Technology and Management
E-ISSN: 2455-7528
Vol.12 Issue 1 Page No 203-220

Guru	4	4	4	4	4	3	Contextual suggestions for revenue teams.
Email							
HubSpot Email Writer	4	5	4	3	5	3	Drafts tied to CRM context and templates.
Fyxer	4	4	4	4	4	3	Email triage and assistant features.
Shortwave	4	4	4	3	4	4	Inbox organization with AI features.
Scheduling							
Reclaim	4	5	3	3	4	3	Auto- schedules tasks and meetings.
Clockwise	4	4	5	3	4	3	Smart calendar optimization.
Presentations							
Gamma	4	5	4	3	4	4	Slides from prompts with design, Diet generation tools rules
Copilot (PowerPoint)	4	5	5	3	5	4	Enterprise- ready copilot in productivity apps.
Resume Builders							
Teal	4	5	4	3	4	3	Resume builder with job tracking.
Kick resume	3	5	4	3	3	3	Good templates and web conversion.
Voice Generation							
ElevenLabs	5	5	5	3	4	4	Industry- leading voice quality and cloning
Murf	4	5	4	4	4	3	User- friendly TTS with editor interface.
Music Generation							
Suno	4	4	4	3	3	5	Strong musical creativity from prompts.
Udio	4	4	4	3	3	4	Flexible editing and high- quality outputs.
Marketing							
AdCreative. ai	4	5	4	4	3	4	Fast ad generation.

Correspondence to: Raji R*, **Department of Computer Science**, **Suresh Gyan Vihar University, India***
*Corresponding author. E-mail addresses:*raji.23183945@mygyanvihar.com

Available online at https://www.gyanvihar.org/researchjournals/ctm_journals.php
SGVU International Journal of Convergence of Technology and Management
E-ISSN: 2455-7528
Vol.12 Issue 1 Page No 203-220

AirOps	4	4	5	3	5	5	Workflow & playbook- based content ops at scale.
Sales							
Attio	4	4	4	4	4	3	CRM with automated data

The **Table 4** presents the top-performing AI tools across various categories, identified through comparative evaluation based on accuracy, usability, scalability, cost efficiency, integration, and innovation.

Table 4: List of top-performing AI tools identified in the study.

Category	Top Performer	Average Score (1-5)
AI Assistants	Gemini	4.83
Video Generation	Google Veo	4.17
Image Generation	GPT-4o (image)	4.83
Meeting Assistants	Fathom	4.17
Automation	n8n	4.17
Research	NotebookLM	4.0
Writing	Rytr	4.0
Search Engines	Google AI Mode	4.5
Graphic Design	Canva Magic Studio	4.5
App Builders & Coding	Cursor	4.0
Knowledge Management	Notion Q&A	4.33
Email	HubSpot Email Writer	4.0
Scheduling	Reclaim	4.0
Presentations	Copilot (PowerPoint)	4.33
Resume Builders	Teal	3.83
Voice Generation	ElevenLabs	4.33
Music Generation	Suno	3.83
Marketing	AirOps	4.33
Sales	Attio	3.83
Diet Generator	Healthify Me	4.83

4.1 Key Findings

1. Existing AI tools are heavily concentrated in areas such as image generation, video generation, entertainment, and automation, while AI tools specifically designed for diet generation are limited and underexplored.
2. Most diet-related AI tools were developed before 2015, and therefore do not integrate modern AI advancements such as deep learning, large language models, or generative AI.
3. There is no existing AI framework dedicated to personalized nutrition, indicating a major research gap in applying advanced AI technologies to dietary planning and lifestyle disease management.
4. Current tools lack personalization, user-specific analytics, and integration of real-time health or lifestyle data, which are essential for effective nutritional recommendations.

Correspondence to: Raji R*, **Department of Computer Science**, **Suresh Gyan Vihar University, India***
*Corresponding author. E-mail addresses:*raji.23183945@mygyanvihar.com

Available online at https://www.gyanvihar.org/researchjournals/ctm_journals.php
SGVU International Journal of Convergence of Technology and Management
E-ISSN: 2455-7528
Vol.12 Issue 1 Page No 203-220

5. The systematic evaluation of known AI tools (as shown in Table 4) reveals significant variation in architecture, accuracy, cost, and applicability, highlighting the need for domain-specific and purpose-built solutions.
6. The identified gaps demonstrate strong opportunities for research, especially in developing nutrition-focused AI models capable of supporting data-driven nutritional science.
7. Based on these findings, the study proposes NutriGen AI as a novel AI application that integrates advanced technologies to address the unmet need for personalized nutrition and lifestyle disease management.

5. Future Directions

Future work will focus on fully developing the NutriGen AI application based on the REGM framework, which integrates four modules—Recognizer, Evaluator, Generator, and Motivator—to deliver precise nutrition assessment and personalized diet recommendations. Advancing the system using modern AI technologies can significantly enhance personalization capability [1]. Expanding the dataset to include diverse demographic groups, age categories, lifestyle profiles, and cultural dietary patterns will improve both the accuracy and generalizability of the system. Prior studies have demonstrated that broader and more heterogeneous datasets produce superior personalized recommendations in nutrition-focused AI systems [2]. Further enhancement of the Motivator module may involve embedding predictive analytics, behavioral modeling, and emotional-wellness tracking to deliver more adaptive and sustained motivation for healthy living. Recent reviews emphasize that next-generation personalized nutrition systems must incorporate behavioral and psychological dimensions alongside nutritional parameters [3]. To ensure clinical-grade reliability, future work must involve collaboration with healthcare professionals, dieticians, and public-health researchers. Evidence from comparative studies of AI-based dietary recommendation tools shows that expert validation is essential for achieving accuracy and safety in practical healthcare applications [4].

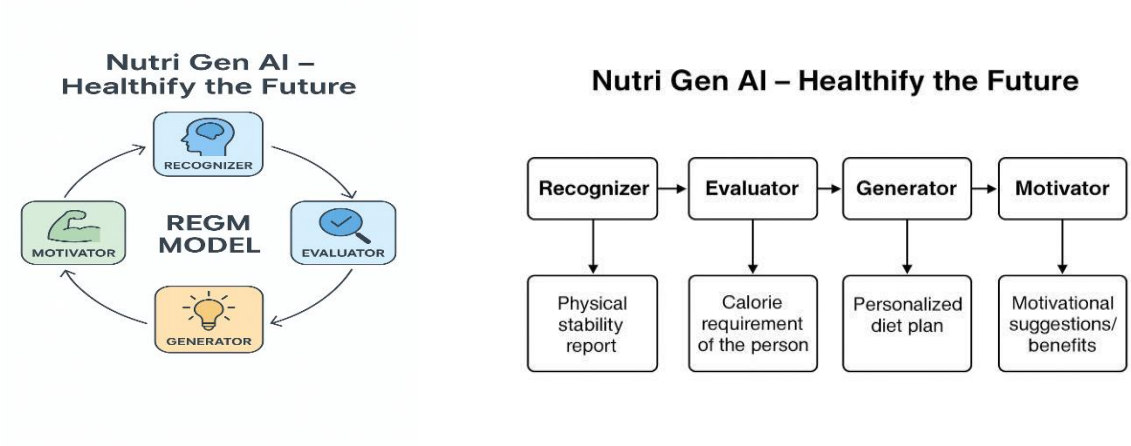


Figure 3: Proposed System based on *REGM* model

By integrating real-time health monitoring**,** physical information etc. can enable deeper personalization. Expanding the dataset with diverse demographic and dietary patterns can further improve model accuracy and inclusivity. Incorporating predictive analytics and emotional-wellness tracking may also strengthen the motivational component of the REGM framework. Collaborations with healthcare professionals and nutrition experts will be essential to validate and refine the system for clinical and public health applications.

Correspondence to: Raji R*, **Department of Computer Science**, **Suresh Gyan Vihar University, India***
*Corresponding author. E-mail addresses:*raji.23183945@mygyanvihar.com

Available online at https://www.gyanvihar.org/researchjournals/ctm_journals.php
SGVU International Journal of Convergence of Technology and Management
E-ISSN: 2455-7528
Vol.12 Issue 1 Page No 203-220

6. Limitations

Although '*NutiGen AI*' demonstrates strong potential in providing personalized dietary recommendation through its *REGM model*, certain challenges yet remain. The system depends heavily on the accuracy and diversity of its food databases, physical parameters, the authenticity of medical back grounds etc. Managing users with complex medical condition is a difficult task as it requires access to authentic and updated medical records, and variations in user-provided data can affect precision. Additional challenges include privacy, scalability of real time processing, ethical concerns etc. The proposed system should make sure of imposing strict, high standard data protection and encryption standards. As this undergoes real time data processing, high computational power is needed. Clinical validation and expert reviews are also mandatory since the system ultimately focus at well-being of users.

7. Conclusion

In this study, we conducted a comparative evaluation of various existing AI tools. The intention was to understand the current landscape of artificial intelligence and its applicability in nutritional science. The findings indicate that, although AI has made significant advancements across multiple domains, its use in nutrition particularly in automated and personalized diet generation remains relatively limited. This gap highlights the need for a specialized, context-aware system. To address this, we introduced *NutriGen AI – Healthify the Future*, an application built on the *REGM model* (Recognizer, Evaluator, Generator, Motivator) architecture. This framework enables a structured, intelligent, and user-centered approach to generating personalized diet plans, enhancing both precision and effectiveness. Based on the analytical assessment, the proposed NutriGen AI system is expected to achieve an overall performance score of *4.83/5*, demonstrating strong potential for real-world application. Overall, the study underscores that advancing AI integration in nutrition can pave the way for more personalized, efficient, and sustainable health and wellness solutions in the future.

References

[1] R. Bajaj, P. Sharma, and A. Kaur, "AI-based diet recommendation systems: A review of HealthifyMe and similar applications," *J. Nutr. Informat.*, vol. 10, no. 2, pp. 45–52, 2022.

[2] R. Bhatia, L. Chen, and T. Zhao, "Multimodal generative AI in healthcare: Opportunities and challenges," *IEEE Trans. Artif. Intell.*, vol. 5, no. 3, pp. 441–455, 2024.

[3] F. Bolaños, A. Salatino, F. Osborne, and E. Motta, "Artificial intelligence for literature reviews: Opportunities and challenges," *Artif. Intell. Rev.*, vol. 57, no. 10, pp. 259–278, 2024.

[4] P. Chatterjee and A. Dey, "Artificial intelligence in personalized nutrition: Emerging trends and challenges," *Comput. Biol. Med.*, vol. 150, p. 106119, 2022.

[5] Y. Chen and S. Park, "Reinforcement learning-based dietary recommendation: A systematic review," *Expert Syst. Appl.*, vol. 230, p. 120921, 2023.

[6] DeepMind, *Google Veo: Generative video model for creative industries*, DeepMind, 2024.

[7] S. H. Joo, Y. Lee, and H. Kim, "AI-driven predictive analytics in healthcare: Current status and future directions," *Health Informatics J.*, vol. 28, no. 2, pp. 233–249, 2022.

[8] J. Luo, C. Zheng, J. Yin, and H. H. Teo, "Design and assessment of AI-based learning tools in higher education: A systematic review," *Int. J. Educ. Technol. High. Educ.*, vol. 22, no. 1, p. 42, 2025.

[9] B. Mittelstadt, "Principles alone cannot guarantee ethical AI," *Nat. Mach. Intell.*, vol. 5, no. 4, pp. 349–356, 2023.

[10] K. Nguyen-Trung, A. K. Saeri, and S. Kaufman, "Applying ChatGPT and AI-powered tools to accelerate evidence reviews," *Hum. Behav. Emerg. Technol.*, vol. 6, no. 1, p. e815424, 2024.

[11] OpenAI, *GPT-4 technical report*, OpenAI, 2023.

[12] OpenAI, *GPT-4o: Multimodal model overview*, OpenAI, 2024.

[13] OpenAI, *Large language models for real-time reasoning*, OpenAI, 2024.

[14] R. Ortega-Bolaños *et al.*, "Applying the ethics of AI: A systematic review of tools for developing and assessing AI-based systems," *Artif. Intell. Rev.*, vol. 57, no. 5, pp. 110–137, 2024.

Correspondence to: Raji R, ***Department of Computer Science, Suresh Gyan Vihar University, India***
*Corresponding author. E-mail addresses:*raji.23183945@mygyanvihar.com

Available online at https://www.gyanvihar.org/researchjournals/ctm_journals.php
SGVU International Journal of Convergence of Technology and Management
E-ISSN: 2455-7528
Vol.12 Issue 1 Page No 203-220

[15] D. Patel, R. Mehta, and S. Agarwal, "Artificial intelligence and nutrition: From calorie tracking to predictive wellness," *Front. Nutr.*, vol. 10, p. 119032, 2023.

[16] M. S. Rahman and C. Lee, "Generative AI for creative media production: Emerging architectures and ethics," *Comput. Graph.*, vol. 114, pp. 1–13, 2023.

[17] J. C. M. C. Silva *et al.*, "AI-assisted tools for scientific review writing: Opportunities and cautions," *ACS Appl. Mater. Interfaces*, vol. 17, no. 34, pp. 47795–47805, 2025.

[18] P. Srinivasan, S. Krishnan, and N. Rao, "AI-driven meal recommendation and dietary monitoring: Current progress and gaps," *Nutr. Health*, vol. 29, no. 4, pp. 356–372, 2023.

[19] J. Su and I. H. Y. Yim, "Artificial intelligence learning tools in K-12 education: A scoping review," *J. Comput. Educ.*, vol. 11, no. 2, pp. 215–234, 2024.

[20] G. Wagner, R. Lukyanenko, and G. Paré, "Artificial intelligence and the conduct of literature reviews," *J. Inf. Technol.*, vol. 37, no. 2, pp. 209–226, 2022.

[21] L. Zhang, Y. Sun, and Q. Lin, "Intelligent data-driven nutrition management using AI and IoT," *IEEE Internet Things J.*, vol. 11, no. 6, pp. 9725–9737, 2024.

[22] Z. Yang *et al.*, "ChatDiet: Empowering personalized nutrition-oriented food recommender chatbots through an LLM-augmented framework," *arXiv preprint* arXiv:2403.12345, 2024.

[23] R. M. Carrillo-Larco, "LLMs for energy and macronutrient estimation using only text data from 24-hour dietary recalls: A parameter-efficient fine-tuning experiment," *arXiv preprint* arXiv:2501.12345, 2025.

[24] L. Bakar *et al.*, "SnappyMeal: Design and longitudinal evaluation of a multimodal AI food logging application," *arXiv preprint* arXiv:2502.12345, 2025.

[25] H. F. Navratilova, A. D. Whetton, and N. Geifman, "Integrating food preference profiling, behavior change strategies, and machine learning for cardiovascular disease prevention…," *J. Med. Internet Res.*, vol. 25, no. 1, p. e75106, 2025.

[26] K. Agrawal, P. Goktas, N. Kumar, and M.-F. Leung, "Artificial intelligence in personalized nutrition and food manufacturing: A comprehensive review," *Front. Nutr.*, vol. 12, p. 1636980, 2025.

Correspondence to: Raji R***, Department of Computer Science, Suresh Gyan Vihar University, India***
*Corresponding author. E-mail addresses:*raji.23183945@mygyanvihar.com