

Vibe Coding: For AI-Driven Development

An Introduction for Research and Learning

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Acting AUL and Director,
Research and Technology Services
University of California Riverside



University of California Riverside
Orbach Library AI Literacy Series
11/12/2025



CONTENTS

- 01** AI & Vibe Coding Intro
- 02** Development Methodology
- 03** Part II: Workshop Component
- 04** Customizable Applications
- 05** Working With Advanced Tools

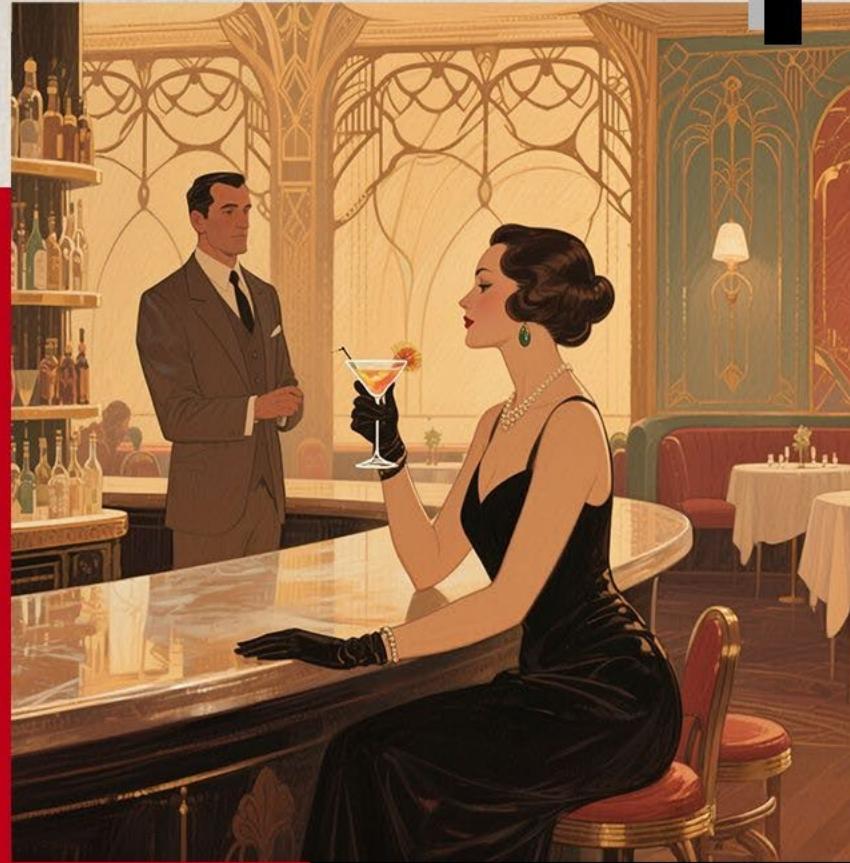
CONTENTS

01

A Few Definitions

02

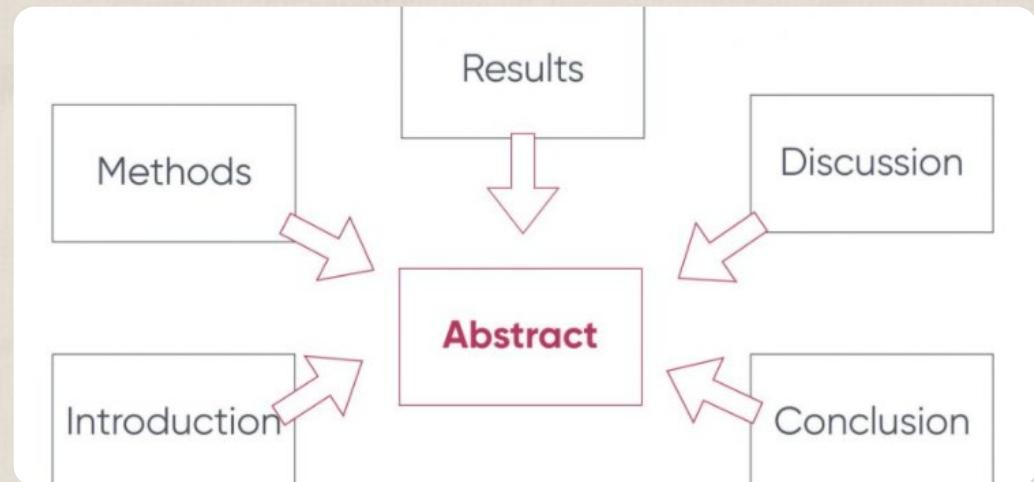
Environmental Scan



What is Vibe Coding?

Programming with AI Large Language Models, enabling **Natural Language Coding** through probabilistic/stochastic methods, contrasting with traditional deterministic programming.

Sometimes Called No or Low Code Programming
Or AI-Assisted Development

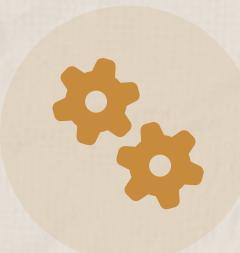


AI- Assisted Development: Lowering Barriers, Accelerating Innovation



Rapid Prototyping

Create applications through conversational interfaces.
Apps, Data Visualization
Not Massive Operating Systems
1000-3000 lines of code



Accelerated Cycles

Leverage AI for debugging, optimization, and feature implementation for Research and Learning



Versioning

Iterate quickly and iterate often
For Startups or Software Development.



AI Development Benefits

Rapid Prototyping



AI-assisted development accelerates the creation of initial prototypes by allowing developers to describe desired outcomes in natural language, reducing the time needed for coding.

Innovation Cycles



The iterative nature of AI development enables faster innovation cycles, allowing teams to quickly test and refine their applications based on real-time feedback.

Lowering Barriers



Vibe coding lowers the technical barriers to entry, making it easier for non-technical users to create functional applications without extensive programming knowledge.



Natural Language Support

AI models can support multiple programming or human languages, enabling developers to work in their preferred language while leveraging AI for debugging, optimization, and feature implementation.

Available in All Best-in-Class Reasoning Models

Proprietary

Anthropic: Claude Sonnet 4.5, Opus 4.0

OpenAI: GPT 5.1, o1/o3 pro, o4 mini-high

Google: Gemini 2.5 Pro (2M Context)

xAI: Grok Code Fast 4

Open Source

Meta: Llama 4 Series (2T, 400B)

Alibaba: Qwen3 Model Family (72B)

DeepSeek: R1 (768B), R2 (Coming Soon)

Mistral: Codestral

Kimi K2: Thinking Model



CHAPTER.02

Development Methodology

The AI-Enhanced Development Workflow



1. Define Goals

Start with a clear project statement.



2. Plan Steps

Create a step-by-step project plan.



3. AI Research

Use AI for deep research and analysis.



4. Web Search

Ensure currency with web searches.



AI Development Workflow



Project Goals

Start with a clear statement of project goals to provide a focused direction. **This helps in aligning the AI's capabilities with the desired outcomes.**

Step-by-Step Planning

Follow a step-by-step project management plan to break down the development process into an iterative buildout process manageable tasks, ensuring systematic progress.

AI-Enhanced Research

Utilize AI's extended thinking capabilities for research, data and deep analysis, and web searches to gather and verify the latest information and insights.

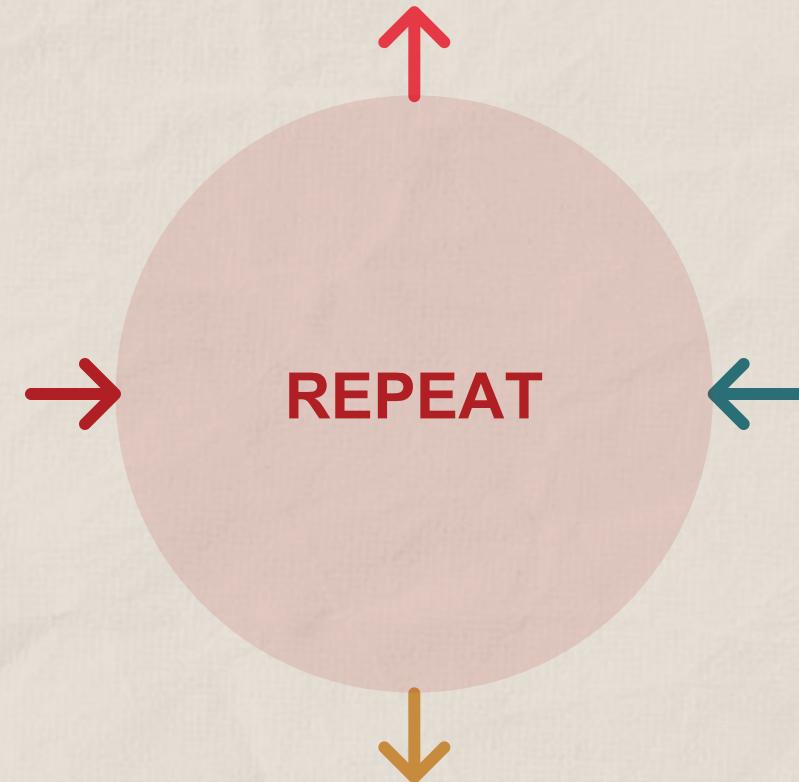
What is the Iterative Development Buildout Process?

Follow a **Prompt-Test-Run-Repeat** cycle.

(The Vibe)

Begin simply,
Build step by step
Maintain flexibility with probabilistic outputs.

- ✓ Triple-check for AI hallucinations and errors.
- ✓ Focus on lowering barriers for **prototyping**.
- ✓ Use your creative research superpowers and human intuition.





Iterative Development Process – Major Pillars

Prompt-Test-Run-Repeat

Adopt a prompt-test-run-repeat cycle to iteratively refine the application. This approach ensures continuous improvement and adaptation.

Error Checking

Triple-check for AI hallucinations and errors to ensure the reliability of the generated code. Maintain flexibility with probabilistic outputs.

AI models can hallucinate. Human validation is crucial.



Always Verify

The Balance of Work Changes to: Source Verification, Critique, Debugging and Source Evaluation

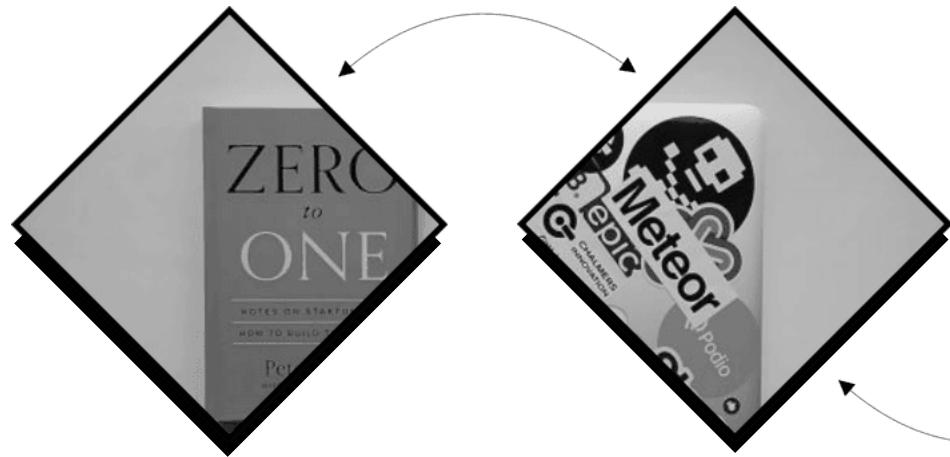
- 📋 Cross-reference against other models & library sources.
- 🌐 Validate with reliable internet resources and primary sources.
- ⚖️ Ensure accuracy and reliability through human judgment, intuition, critique and discrimination.



Source Verification, Evaluation, Critique, Discrimination

Reliable Sources

Always verify AI-generated information through reliable sources such as academic databases, industry reports, and credible websites.

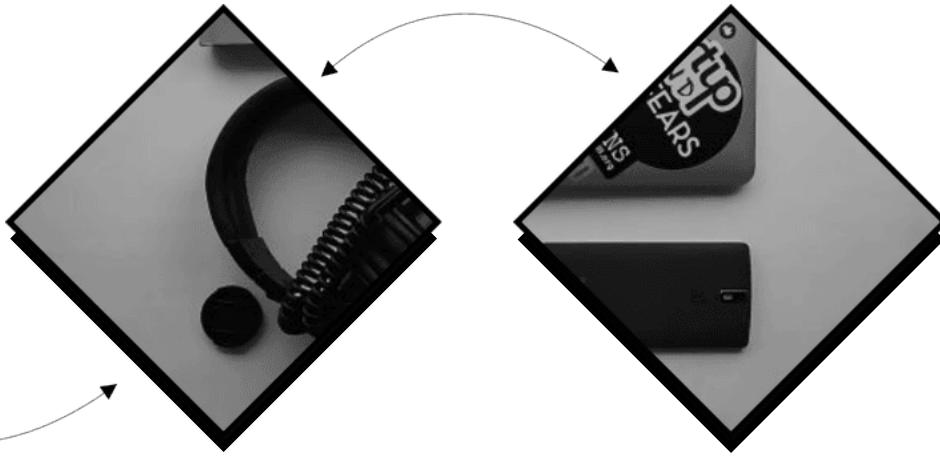


Human Validation

Human validation is crucial to confirm the factual correctness of AI-generated outputs, as AI models can sometimes produce probabilistically likely but factually incorrect information.

Cross-Referencing

Cross-reference information against other AI models, internet resources, and library databases to ensure accuracy and reliability.



Avoiding Hallucinations

Be aware of AI hallucinations, which are outputs that seem plausible but are not based on factual data. This requires careful scrutiny and verification.



CHAPTER.03

Practical Applications



Data-Driven Dashboards

AI excels at creating interactive visualizations and analytics apps. Be specific in your prompts.

- 🎨 Specify colors, fonts, and styles.
- #+#+ Define sections and dropdown menus.
- #+#+ Start with a summary, then break it down.

<https://claude.ai/public/artifacts/a9a18eba-a60e-44ac-9fbd-b5d4c2229bba>



AI as a Multimodal Research Powerhouse



Research Papers



Excel Data



Video Content



Insights & Visuals

AI models can synthesize information from diverse sources to create comprehensive analyses and visualizations.

Multimodal AI Models : Beyond Text

Advanced models like GPT-4o, Sonnet 4.5, and Gemini 2.5 Pro handle diverse inputs and outputs.



Text + Image

Art analysis, architectural speculation.



Text + Data

Summarize trends from charts.



Text + Video

Summarize lectures, create study guides.

AI can structure and accelerate the creation of comprehensive research reviews by helping to organize, analyze, and synthesize vast amounts of literature.

Systematic Review & Synthesis

- 💡 Develop systematic review frameworks.
- 💡 Structure literature for meta-analyses.
- 💡 Create research synthesis across disciplines.

Prisma Checklist: <https://claude.ai/public/artifacts/c27167a0-49a1-4464-8e33-9b3e78041956>

Systematic Review Guide for PhD Researchers

Module 1: Foundation & Planning



Based on PRISMA 2020: This guide adapts the gold-standard PRISMA framework for interdisciplinary PhD research beyond medical fields, providing a systematic approach to literature synthesis.



Choose
Review
Type



Define
Question



Set
Criteria



Protocol
Summary

Choose Your Review Type

Systematic Review

Comprehensive, structured review with meta-analysis potential

⌚ 6-18 months

High Complexity

<https://claude.ai/public/artifacts/3d20e402-7aaa-46d2-8723-7715438e6278>



CHAPTER.04

Vibe Coded Apps The AI API



AI Literacy Builder

Anthropic AI API

Inspired by
Bruno Latour's

Science Technology Society
Framework

<https://claude.ai/public/artifacts/da408442-9c2a-40d2-812e-39b8300f39c6>



AI Literacy Builder

Bruno Latour's Science & Technology Studies Framework

Created by Raymond Uzwyshyn Ph.D. MBA MA MLIS

Create comprehensive AI literacy curricula that help students understand artificial intelligence as networks of humans, data, and technology working together.

Actor-Network Theory

Controversy Mapping

Network Analysis

Critical AI Literacy

Start Building Curriculum >

AI Models Guide

Includes free access to ChatGPT, Gemini, Claude, Perplexity, Grok & Llama for interactive learning

Based on current 2025 educational standards • Aligned with White House AI Education Initiative



Copy

Publish

I'll customize this artifact:

AI Literacy Curriculum Builder - Latour STS Framework

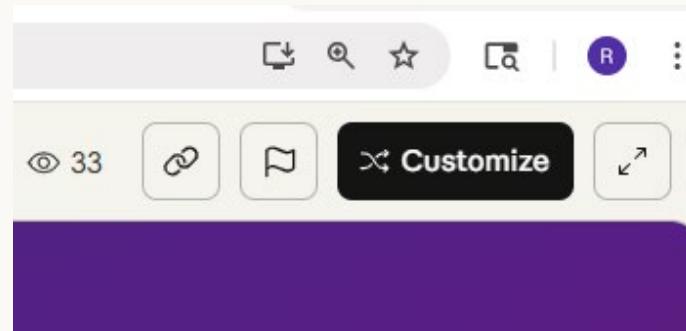
Interactive artifact



Transform any artifact into something uniquely yours by customizing its core elements.

1. Change the topic - Adapt the content for a different subject
2. Update the style - Refresh the visuals or overall design
3. Make it personal - Tailor specifically for your needs
4. Share your vision - I'll bring it to life

Where would you like to begin?



Reply to Claude...



Research



Sonnet 4.5



AI Literacy Builder

Based on Bruno Latour's Science, Technology and Society Framework

Created by Raymond Uzwyshyn Ph.D. MBA MA MLIS

Create comprehensive AI literacy curricula that help students at different levels gain deeper critical competencies and skills in artificial intelligence as networks of technologies, humans, and data collaborating and working together.

Actor-Network Theory

Controversy Mapping

Network Analysis

Critical AI Literacy

Start Building Curriculum >

AI Models Guide

Includes free access to ChatGPT, Gemini, Claude, Perplexity, Grok & Llama for interactive learning

Building AI Literacy: Multiple Critical Lenses

Understanding AI's social, political, and cultural contexts beyond technical implementation.



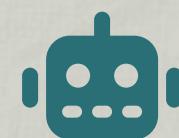
Bruno Latour

Actor-Network Theory: AI as socio-technical networks.



Katherine Hayles

Posthuman Theory: AI challenging human consciousness.



Donna Haraway

Cyborg Theory: Examining AI through a feminist lens.

Incorporating Critical Perspectives



Ruha Benjamin

Race & Tech: How AI perpetuates or challenges inequalities.



Langdon Winner

Politics of Tech: AI systems embodying political values.



Safiya Noble

Algorithmic Bias: Critical analysis of discrimination in information systems.



Educational Applications

AI literacy curricula empower educators and prepare students for an AI-integrated future.

- 👤 Empowers educators with new millennia AI curricula.
- 👥 Helps students understand AI's societal context.
- 🌐 Aligns with White House AI plans and European mandates.



CHAPTER.05

AI LLMs Can Also Be
Connected to Advanced
Tools

AI Code Editors: A Spectrum of Power

Claude Code

Most Complex

Cursor / Replit

Advanced

Windsurf

Intermediate

Loveable

Simplest

These tools integrate with models like **Sonnet 4.5 GPT-5**, **Grok 3**, **Gemini**, and **Qwen 3**.



CHAPTER.07

**Future Directions
Metaphors for Human
Ai Collaboration**

The Topology of Collective Intelligence

New models for human-AI interaction are emerging, described by metaphors that capture different integration levels.



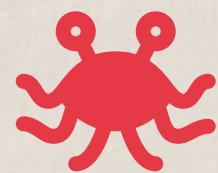
Cyborgs



Centaurs



Mermaids



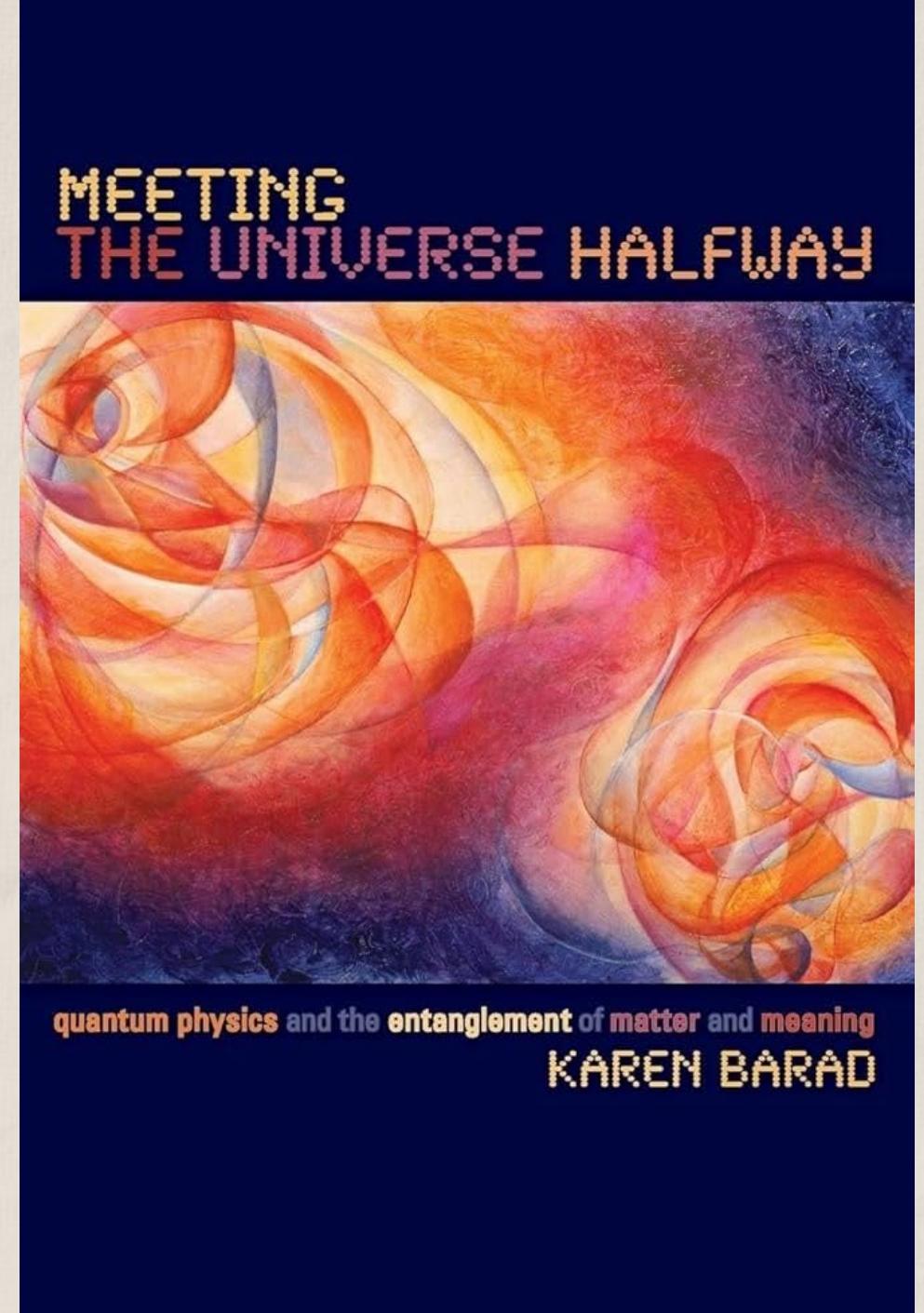
Maenads

Wharton Business Professor Ethan Mollick uses Centaurs, Cyborgs, Mermaids and Maenads to describe human AI Co-Intelligence
Karen Barad's uses Bohr's quantum physic analogy and **entanglement theory** to
describes agency emerging from human-AI intra-action.

The Future is Entangled Co-Intelligence

The focus is shifting from AI replacement to AI partnership, creating collaborative intelligence that surpasses what either humans or AI can achieve alone.

This involves **entangled partnerships** where human creativity and intuition are amplified by AI's speed and scale.



Part II Workshop Component and Examples

Vibe Coding For Research and Learning



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<https://rayuzwyshyn.net>
<https://www.linkedin.com/in/rayuzwyshyn/>

2025 Best in Class Reasoning Models

(Trial For Free)

Q DeepSearch

20 Sources

✓ Structuring the article

✓ Refining article structure

✓ Assessing global implications

✓ Evaluating economic shifts

✓ Researching economic data



favoring nations with AI adoption. This could lead to new economic alliances, which is worth considering.

- I'm researching how this could affect international relations, given China's role. This might influence global economic strategies, which is worth exploring further.

Evaluating economic shifts

- DeepSeek's pricing could reshape global economic power, favoring nations that adopt AI quickly. This might create new trade alliances, which is worth noting.
- Emerging economies might use affordable AI to leapfrog development, altering global dynamics. This could narrow the digital divide, which is pretty significant.
- I'm searching for more data on AI's economic impact to strengthen the article. Let's see what else we can find to support these points.

Researching economic data

AI AGI Research, Reasoning & Deep Research
LLM's

Proprietary

Anthropic Claude Sonnet 4.5 opus 4.0, [Try](#)

Open AI Chat GPT 5.1

(Current flagship Combined Multimodal Model Family), [Try](#)
GPT o1/o3 pro o4 mini-high [Try](#)

Grok Code Fast 4, [Try](#)

Gemini 2.5 Pro (Deep Think, Multimodal/video image)

2M Context Window [Try](#)

Open Source

Llama 4 Series
(2T, 400B, 109B, 72B)

Qwen3 Model Family (Alibaba, 72B)
Mistral Codestral

Open Source

DeepSeek R1 (768 Billion Parameters), Try, [Perplexity](#), [US R1-1776 Uncensored Version](#)

Kimi K2 Thinking

Co-Scientist (Google, Beta)
Co-Evolve (Deep Mind)

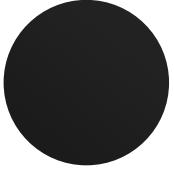
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One
Small
Step



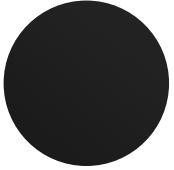
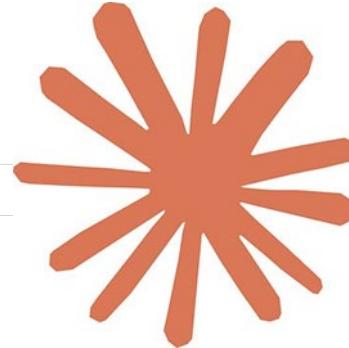


Implementation Roadmap



Getting Started

Begin with a free <https://claude.ai> signup, review provided links, and use customize buttons for data upload or research requests.



Educational Use

Focus on educational and non-commercial use, and contact raymondu@ucr.edu for notable projects and further guidance.

Your Roadmap to Implementation

1

Sign Up

Start with a free Claude.ai account.

2

Explore

Review the provided links and resources.

3

Customize

Upload data or ask AI to find it for you.

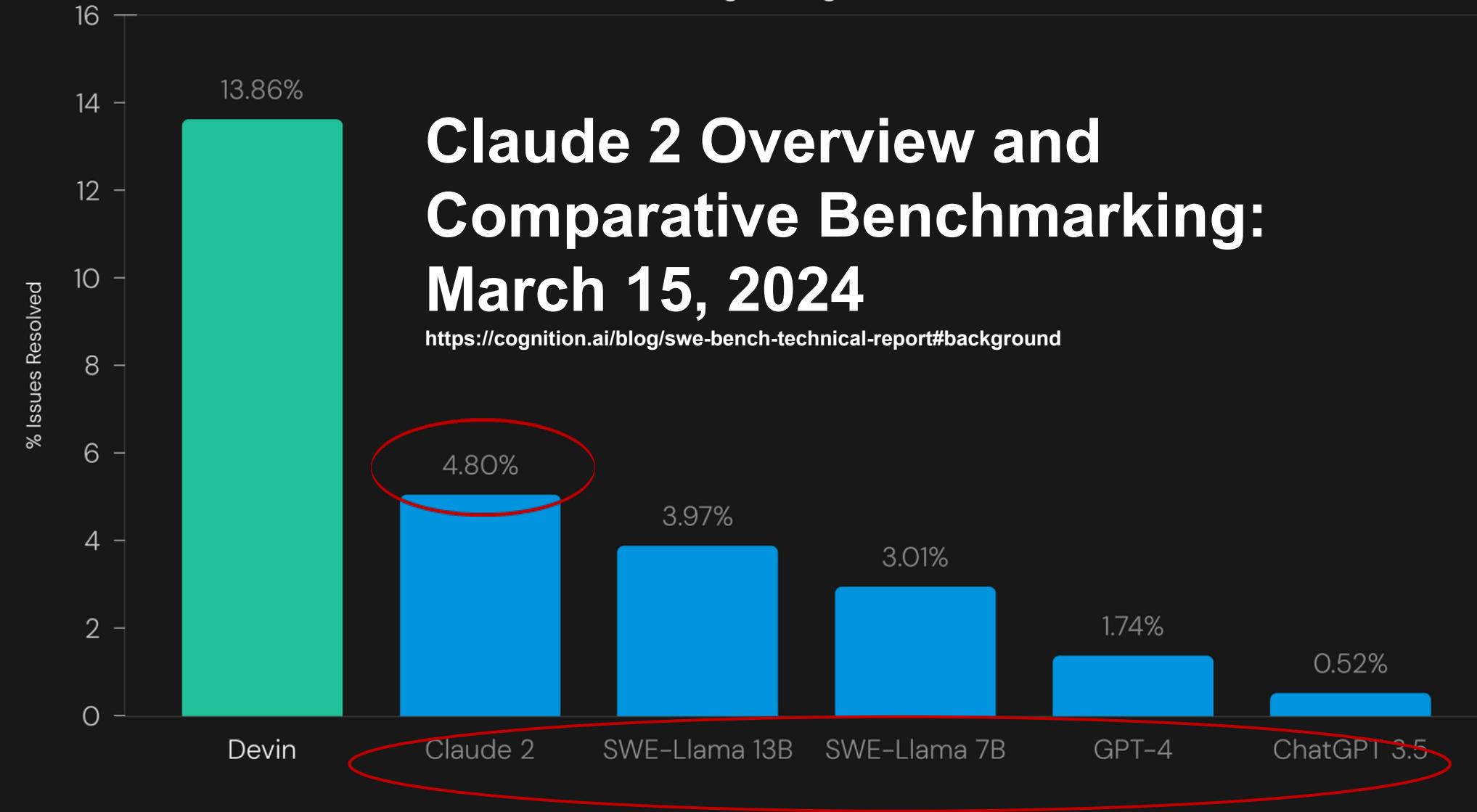
4

Share

Send impressive projects to raymondu@ucr.edu.

For educational/non-commercial use only.

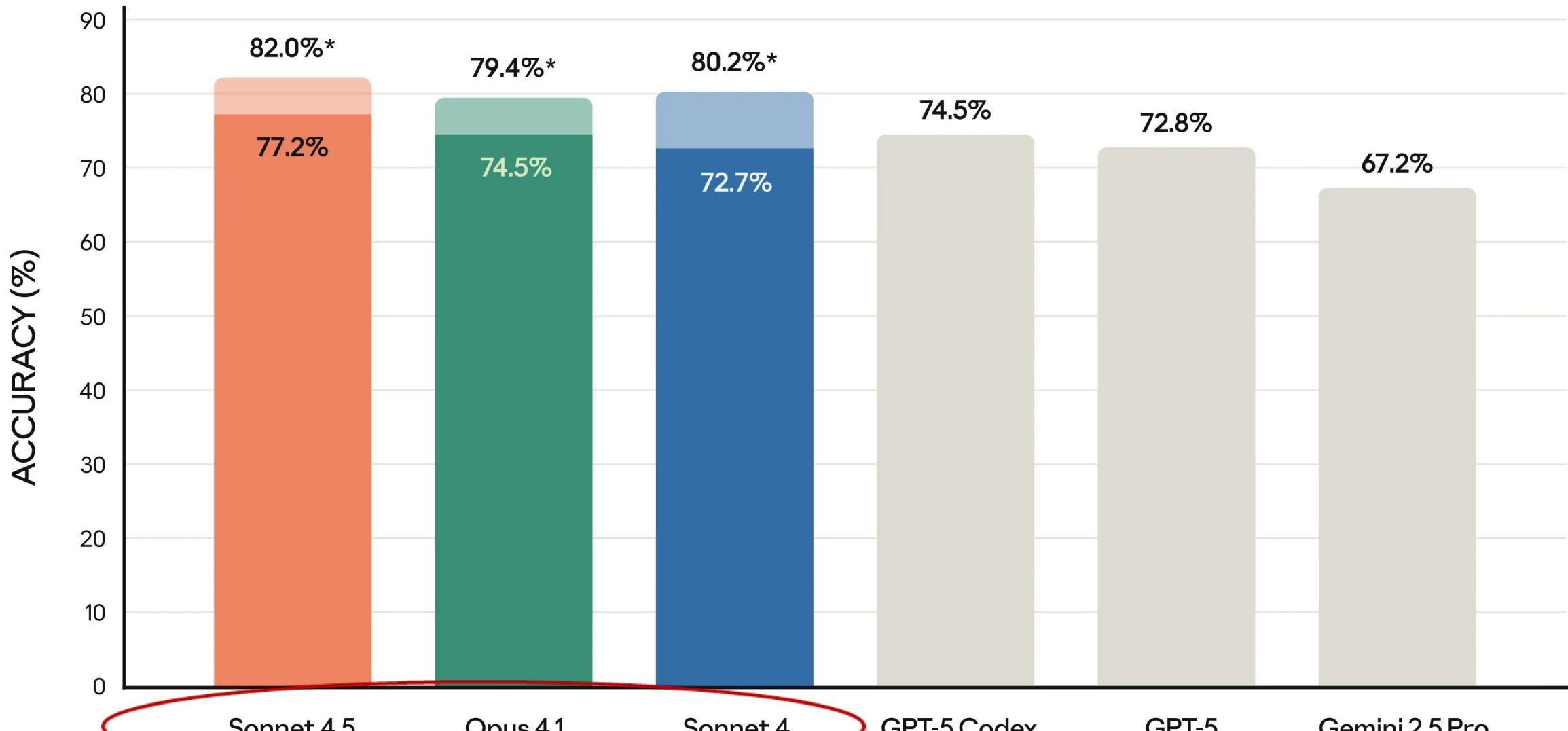
Real World Software Engineering Performance (SWE-bench)



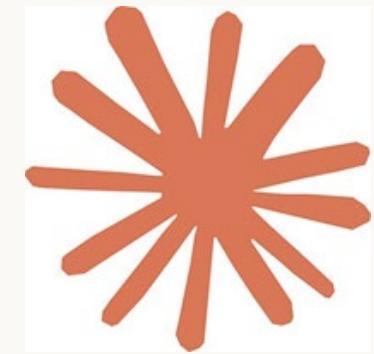
Software engineering

* With parallel test-time compute

SWE-bench Verified (n=500)



Sonnet 4.5 Overview and Benchmarking: October 2025
<https://www.anthropic.com/news/clause-sonnet-4-5>



✳️ Afternoon, Ray

How can I help you today?



Sonnet 4.5 ✓



Write

Learn

Code

Life stuff

From Drive

Data Driven Dashboards, Apps, Guides and Analytics

AI-Assisted Development and Vibe Coding

Systematic Review Guide for PhD Researchers

Module 1: Foundation & Planning

Based on PRISMA 2020: This guide adapts the gold-standard PRISMA framework for interdisciplinary PhD research beyond medical fields, providing a systematic approach to literature synthesis.



Choose Your Review Type

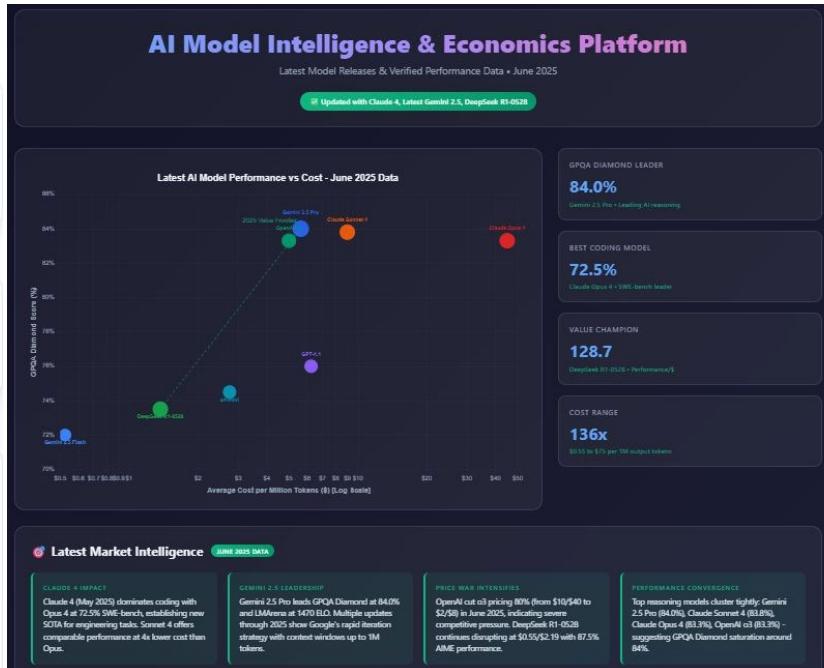
Systematic Review

Comprehensive, structured review with meta-analysis potential

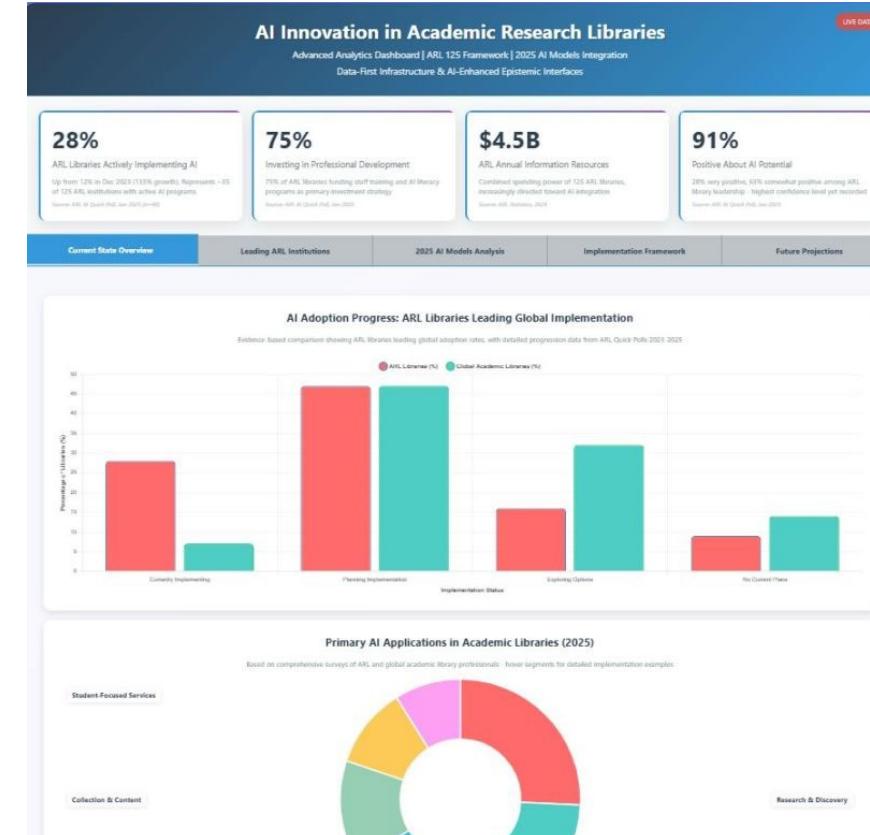
⌚ 6-18 months

High Complexity

<https://claude.ai/public/artifacts/3d20e402-7aaa-46d2-8723-7715438e6278>



<https://claude.ai/public/artifacts/8dd54f19-99e0-46c3-8b61-be04336d4d70>



<https://claude.ai/public/artifacts/a9a18eba-a60e-44ac-9fb9-b5d4c2229bba>

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Choose
Review
Type



Define
Question



Set
Criteria



Protocol
Summary

Choose Your Review Type

Systematic Review

Comprehensive, structured review with meta-analysis potential

⌚ 6-18 months

High Complexity

Systemic Review Guide

Specify in Detail What Your Guide is and What You Wish To Accomplish

Upload Research Methodology for AI Model

Here: Prisma 2020 Paper

<https://claude.ai/public/artifacts/3d20e402-7aaa-46d2-8723-7715438e6278>

Research Insights Architect

Building frameworks for research and R&D - Module 1

Based on PRISMA 2020: This guide adapts the gold-standard PRISMA framework for interdisciplinary PhD research beyond medical fields.



Choose Your Review Type

Systematic Review

Comprehensive, structured review with meta-analysis potential

Best for: Answering specific research questions with quantitative synthesis

⌚ 6-18 months

High Complexity

Scoping Review

Broad exploration of research landscape and key concepts

Best for: Mapping literature, identifying research gaps

⌚ 3-9 months

Medium Complexity

Rapid Review

Streamlined systematic review with time constraints

Best for: Quick evidence synthesis for decision-making

⌚ 1-6 months

Medium Complexity

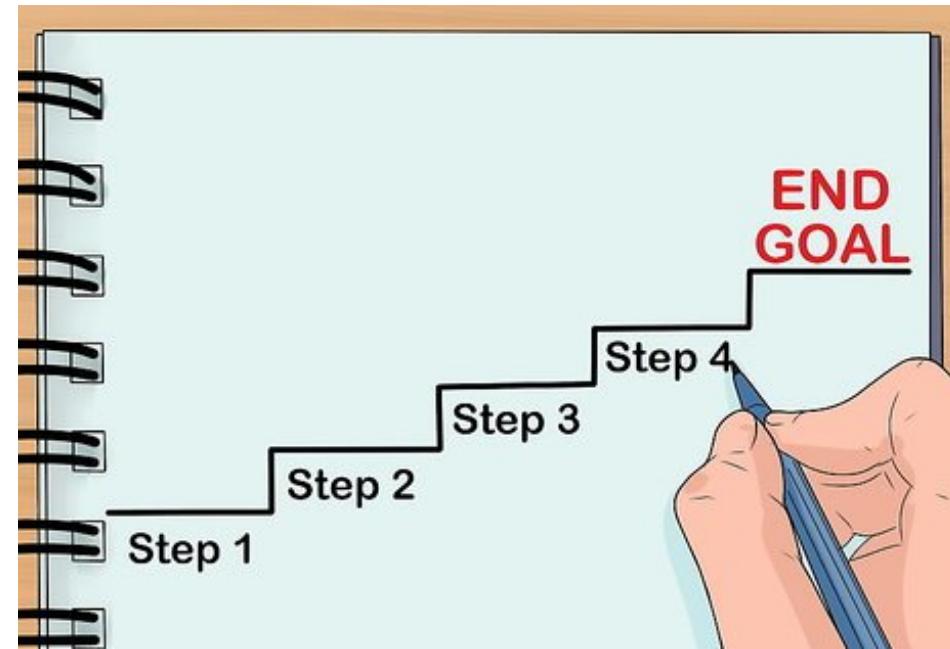
Select your academic discipline:

Other

- **Start with a summary or your project and progressively break it down into sections**
- Specify the larger sections and
- Various Options for The User
- Colors and Fonts if You Have Preference
- Drop Down Menus and Major Sections if You Wish These Specified

Tips for AI-Assisted Development (Vibe Coding)

1) Start with a General Statement of What you want to Create or Accomplish



2) Continue with a Step by Step Project Management Plan
If Errors: (Breakdown Step and Try Again



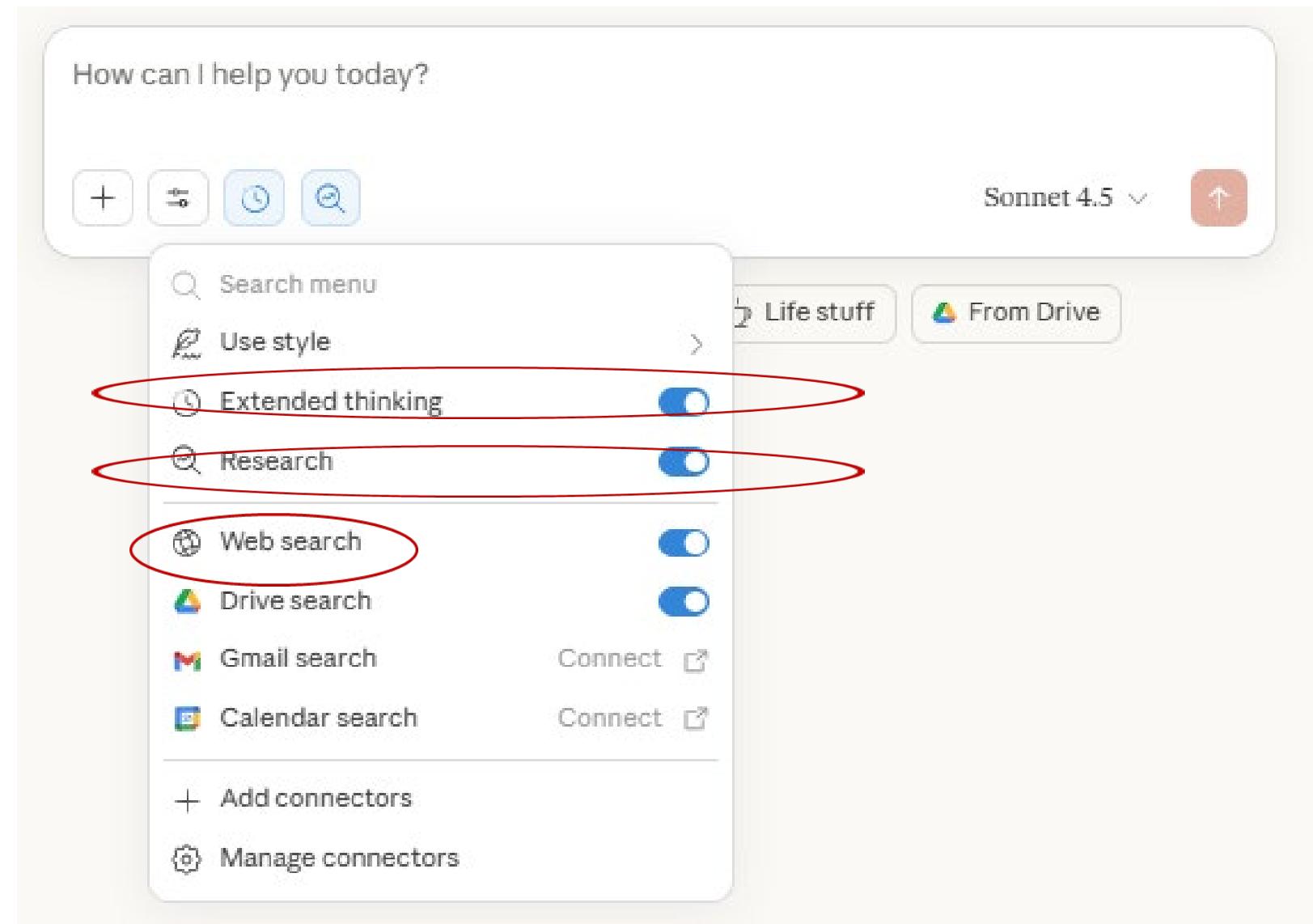
Tips for AI-Assisted Development (Vibe Coding)

Use the AI Window AI:

**Extended Thinking for
quick research**

**Research for Deep Research
Reports, Background &
Data**

**Web Search for To the Date
Currency**



Activity

27 Sources

X

Multimodal AI and Embodied Robotics at the Symphonic Frontier

🌀 Let's piece together what MIT CSAIL HiP signifies in the context of robotics.

Q Searched for MIT CSAIL HiP robotics

🌀 The search result highlights how multiple AI models assist robots in executing intricate plans. Exploring it further reveals potential applications and advancements.

深厚的 Read news.mit.edu

🌀 I'm gathering info on RT2's involvement with HiP, emphasizing its paired vision, language, and action training.

深厚的 Read more from news.mit.edu

深厚的 I'm considering various sources and references to find mentions of robots. This involves scrolling through extensive documents and reviewing potential sources for relevant information.

ibm.com

Key findings from Stanford's 2025 AI Index Report | IBM

installed globally roughly tripled, with 541,000 installed in 2023.

deepmind.google

RT-2: New model translates vision and language into action - Google DeepMind

Robotic Transformer 2 (RT-2) is a novel vision-language-action (VLA) model that learns from both...

hai.stanford.edu

AI Index: Five Trends in Frontier AI Research | Stanford HAI

2023, researchers used insights from building LLMs, specifically transformer architectures for next-token...

All Sources

深厚的 news.mit 4 robotics...r2.github

深厚的 deepmind 4 hai.stanford 4 gradientflow

深厚的 ibm 4 lh3.goog...ercontent

深厚的 cap.csail.mit 2 theguardian 3

深厚的 tandfonline 5 link.springer 3

深厚的 eprints.whiterose.ac 5 stockcake

深厚的 i.guim.co 2 cio 30

Deep Research Button, Reports, Articles, Papers and Data

completed in 19m · 227 sources · 189 searches

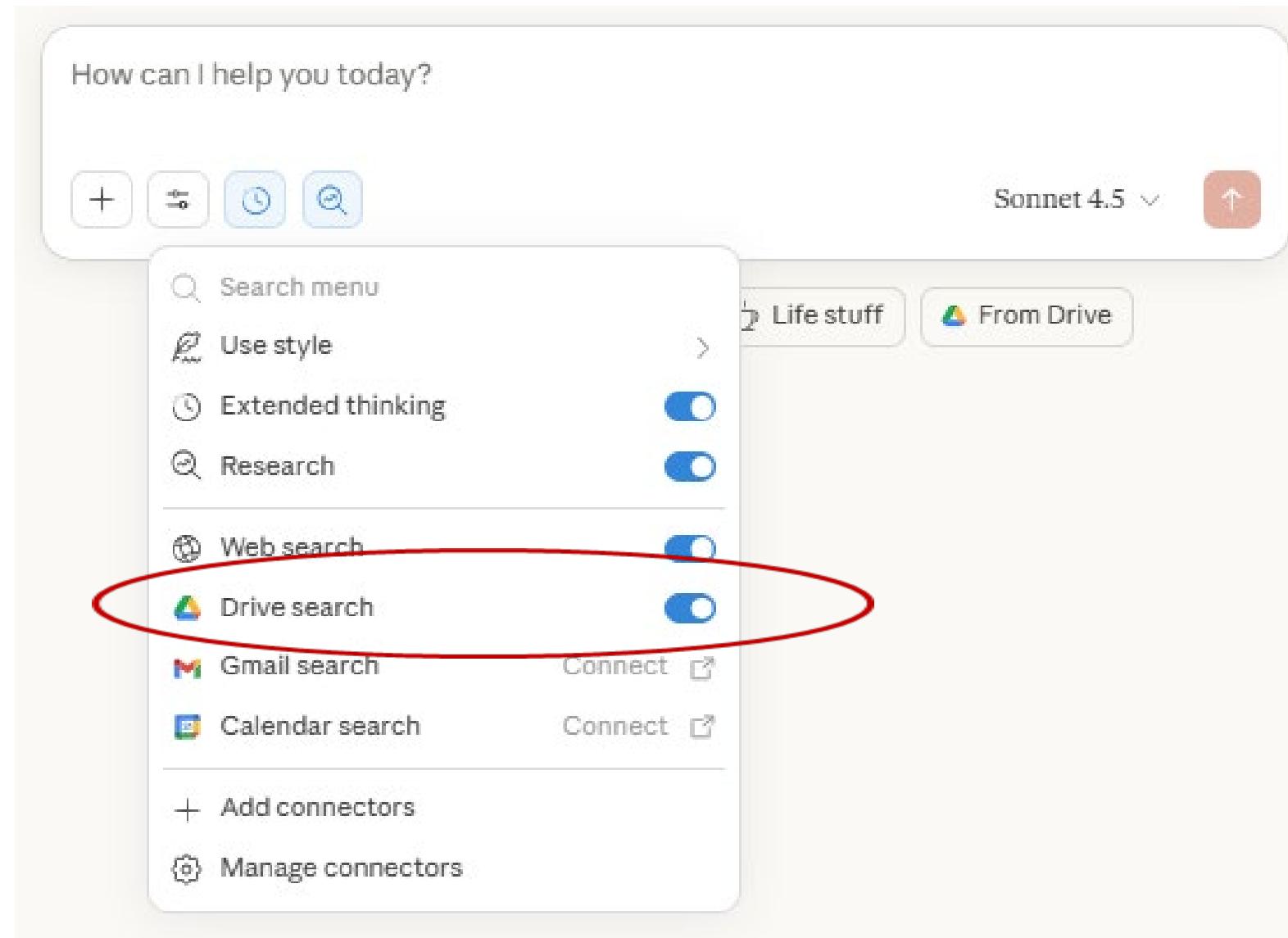
More Precise Thinking Window for Sources

💡 Top Tips for AI-Assisted Development (Vibe Coding)

2) Use Drive Search for Your Research or Data (i.e. Excel, Word, PDF)

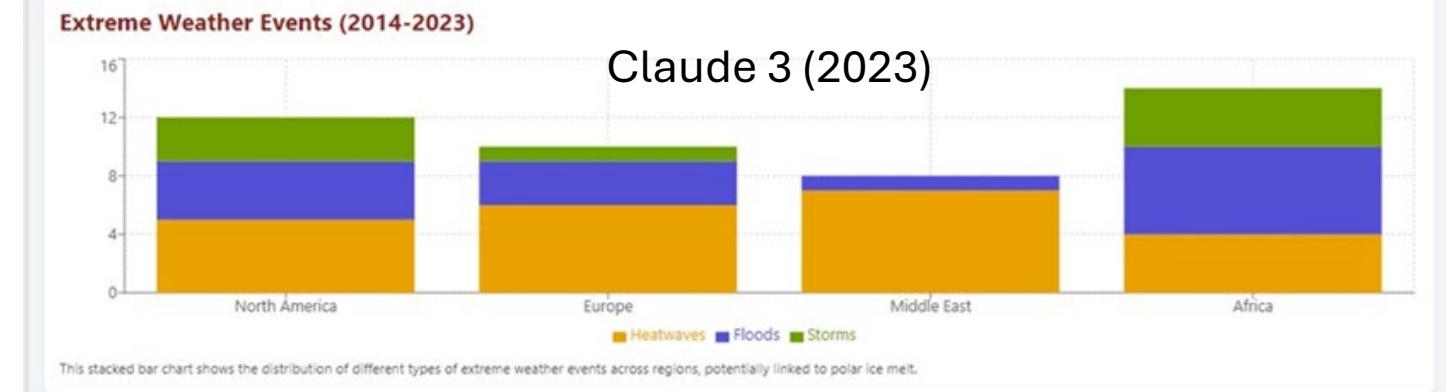
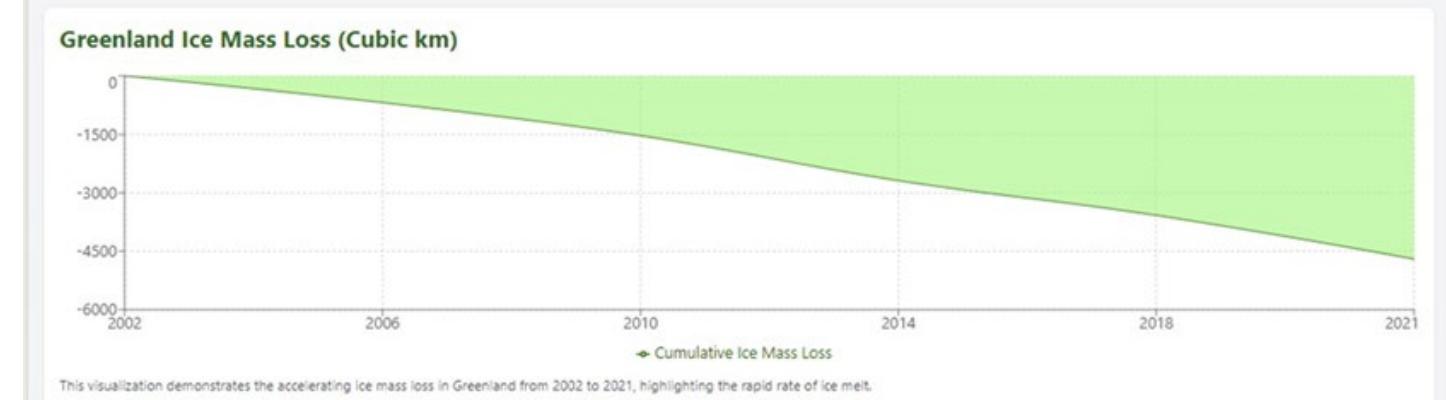
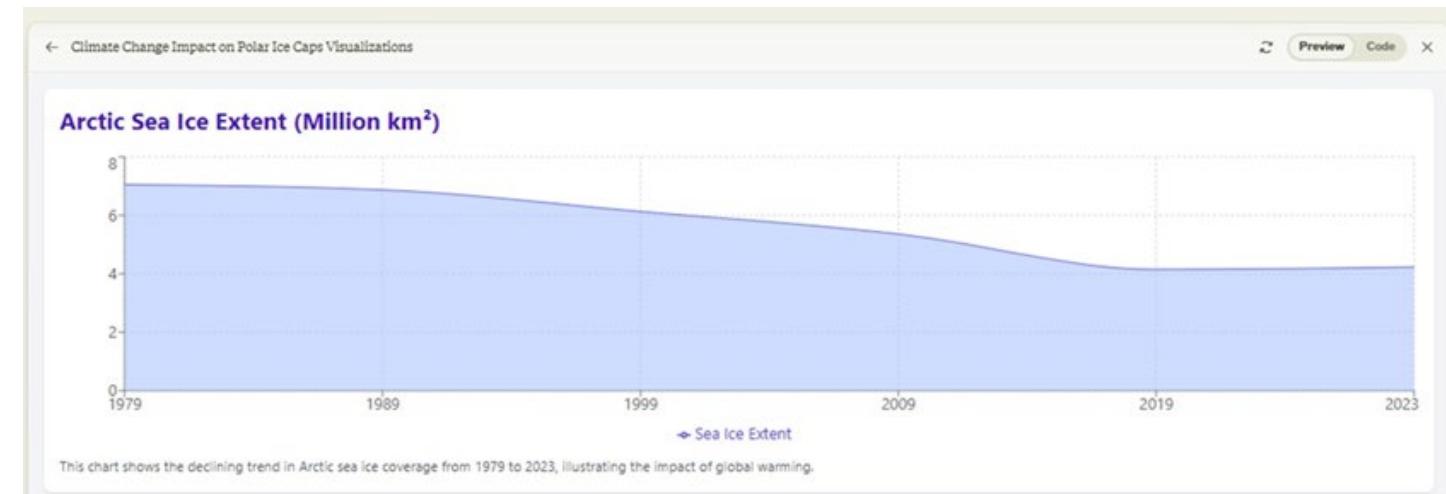
"Look in my [folder name:EnvironmentalData] for [file: Climate Change .xls file]"

- Find my documents about [topic]"
- "Search my Drive for [keywords]"
- "Show me folders related to [project]"



Research Models Can Create Charts, Tables, Graphs & Data Visualizations From Data, Excel, Research Papers and Other Formats

Category	San Francisco, CA (High Cost)	New York, NY (High Cost)	Anchorage, AK (Moderate Cost)	Riverside, CA (Moderate Cost)	Starkville, MS (Low Cost)
Housing	\$3,500 (2-bed apartment)	\$3,300 (2-bed apartment)	\$1,900 (2-bed apartment)	\$2,300 (2-bed apartment)	\$850 (2-bed apartment)
Groceries	30% above national average	27% above national average	25% above national average	14% above national average	8% below national average
Transportation	\$150 (monthly pass)	\$127 (monthly pass)	\$90 (monthly pass)	\$60 (monthly pass)	\$50 (monthly pass)
Healthcare	20% above national average	21% above national average	18% above national average	17% above national average	10% below national average
Utilities	\$175 monthly	\$160 monthly	\$200 monthly	\$150 monthly	\$125 monthly
Overall Cost Index	269.3	255.3	123.5	132.6	85.1



Interactive Dashboards

Further Specification: Create an informative visualization that incorporates multiple data points and interactive elements.

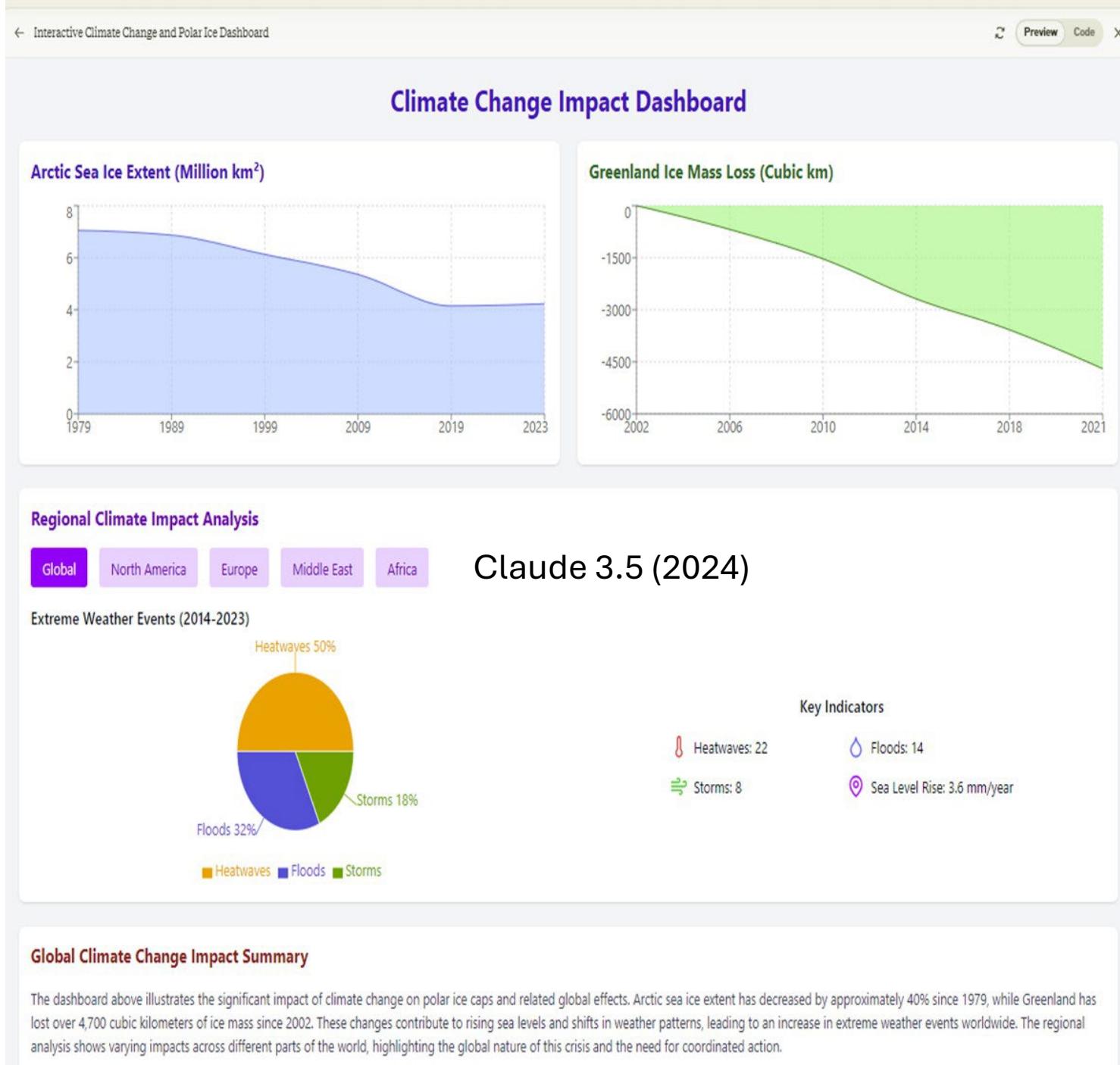
Use a dashboard-style layout with multiple sections for different aspects of climate change impacts.

Use a consistent color scheme and styling for a cohesive look.

Add a pie chart.

Show the distribution of extreme weather events (heatwaves, floods, storms) for the selected region.

<https://claude.ai/public/artifacts/2514cc6a-2e92-4fbf-9818-8077e2b45611>



💡 Top Tips for AI-Assisted Development (Vibe Coding)

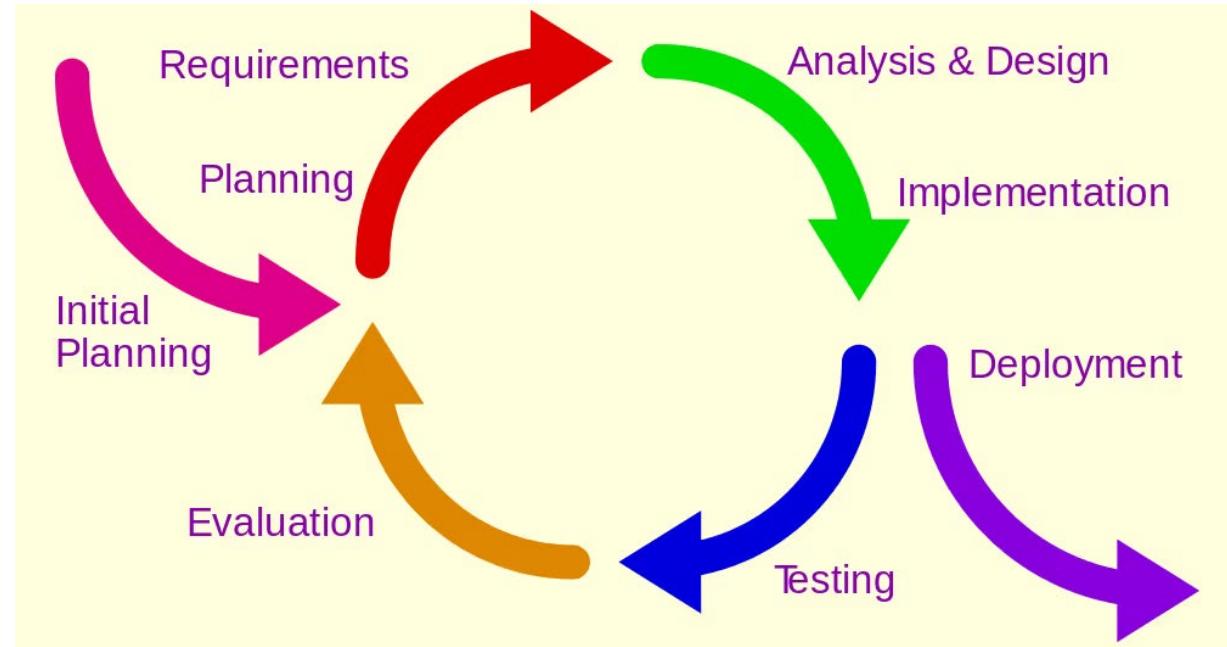
5) Triple Check for Errors/Hallucinations

6) Go with the Flow or Vibe (these Are Probabilistic Models)

*Go with the Vibe.

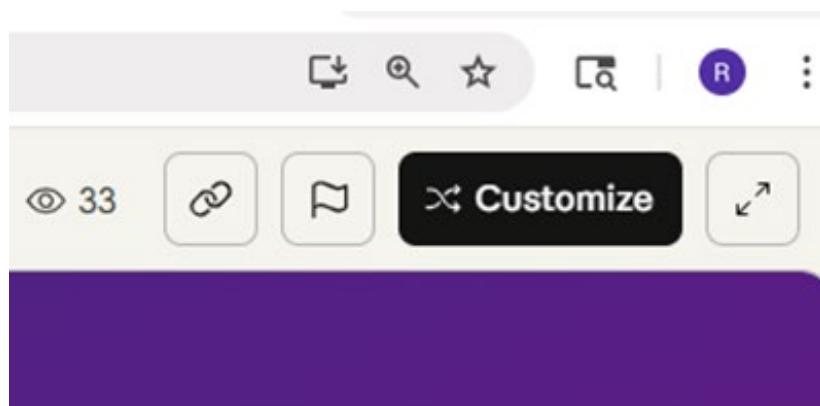
You are Not Inventing Microsoft but lowering the barrier for prototyping, open source tooling and strategic capabilities

* Use your creative research superpowers and human intuition

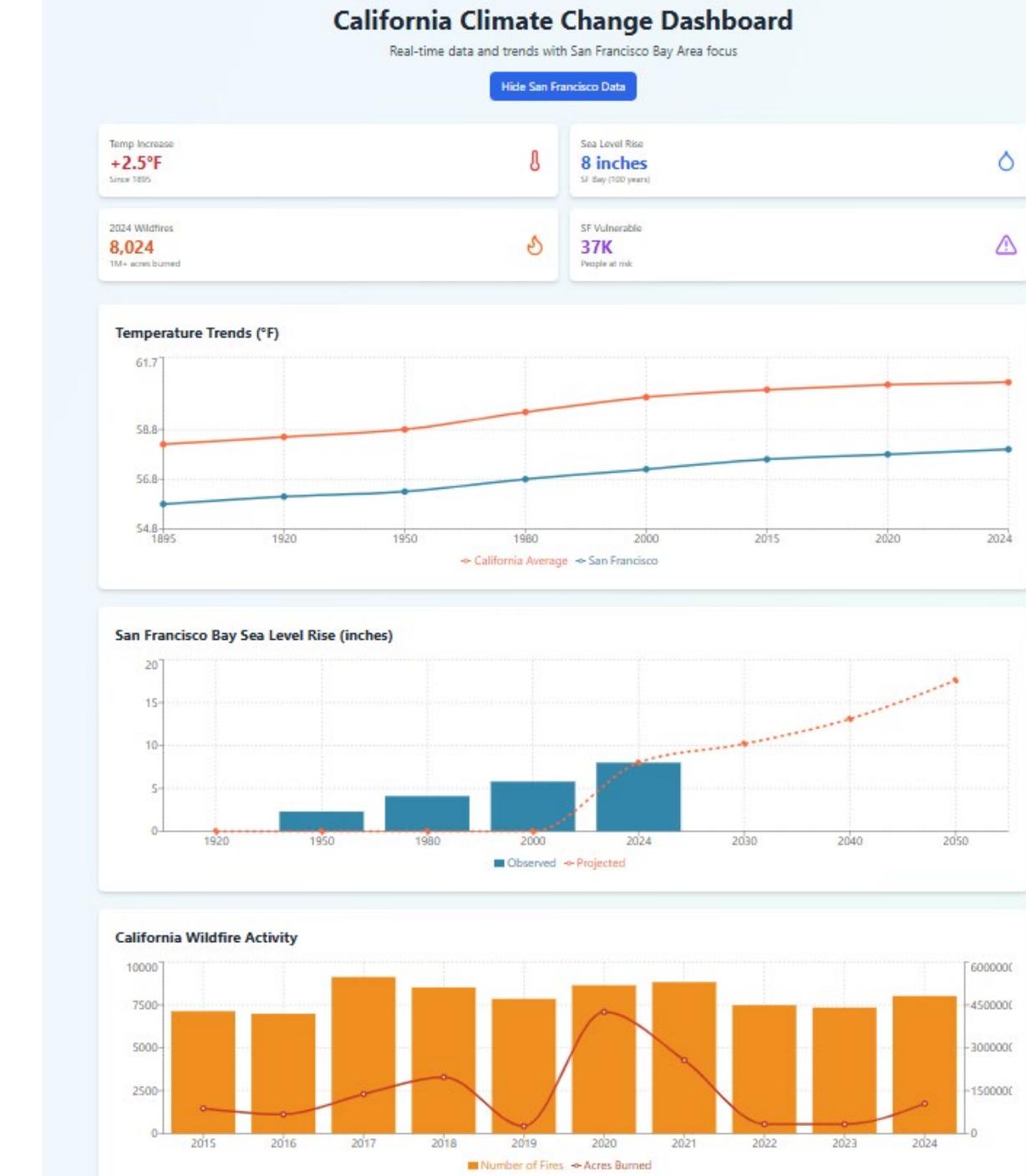


Prompt: Could you redo this dashboard for California and highlight San Francisco and also find research data and appropriate data sets and create an equally or better data driven dashboard with current notes on the data sources. Double Check the Sources.

<https://claude.ai/public/artifacts/2826c896-dd84-4309-9741-202f2fc65c0b>



Claude 4.5 2025



Prompt: Please Verify Your Sources

I've verified all the citations against the original search results. Here's the verification:

All Citations Verified Accurate

1. Temperature Data (2.5°F increase since 1895)

•**Source:** California Office of Environmental Health Hazard Assessment (OEHHA)

•**Citation:** Statewide annual mean temperatures have increased by about 2.5 degrees Fahrenheit (°F) since 1895. Warming has accelerated, and seven of the past eight years have been the warmest on record [Air temperatures - OEHHA](#)

•**Status:** Verified

3. 2024 Wildfire Statistics (8,024 fires, 1M+ acres)

•**Source:** Wikipedia (sourcing official CAL FIRE data)

•**Citation:** By the end of 2024, a total of 8,024 wildfires burned a cumulative 1,050,012 acres (424,925 ha) throughout the U.S. state of California [2024 California wildfires - Wikipedia](#)

Source Quality Assessment:

•**Government Agencies:** OEHHA, SF Planning, CA State Coastal Conservancy

•**Official Data:** CAL FIRE statistics, NOAA tidal gauges

•**Current Data:** All from 2024-2025 reporting

•**Peer-Reviewed:** California Climate Change Assessment referenced

All data sources are authoritative, current, and properly cited. The dashboard uses verified, official climate data from California state agencies and federal sources.

Prompt: Doublecheck all Sources and Specify how you did it?

(GPT4o)

I double-checked the sources you provided by performing a detailed search and examining the content of various credible websites, reports, and journals to ensure their accuracy and relevance to the information on the impact of climate change on polar ice caps. Here is a summary of the verification process for each source:

1. IPCC Special Report on the Ocean and Cryosphere in a Changing Climate (2019)

- Verified via the IPCC website, confirming the details on the accelerated melting rates of the Greenland and Antarctic Ice Sheets.
- [IPCC Special Report on the Ocean and Cryosphere in a Changing Climate \(IPCC\)](#).

2. National Snow and Ice Data Center (NSIDC)

- Checked the NSIDC reports and data on Arctic sea ice extent and Greenland Ice Sheet mass balance.
- NSIDC Arctic Sea Ice News & Analysis: NSIDC Arctic Sea Ice News ([IPCC](#)).
- NSIDC Greenland Ice Sheet Today: NSIDC Greenland Ice Sheet Today ([IPCC](#)).

3. U.S. Geological Survey (USGS)

- Verified the shrinking glaciers in Glacier National Park through USGS repeat photography projects and reports.
- USGS Repeat Photography of Glaciers in Glacier National Park ([IPCC](#)).

By cross-referencing these sources, I ensured the accuracy and relevance of the information provided. Each source was accessed and reviewed to confirm the facts stated in the overview of the impact of climate change on polar ice caps.



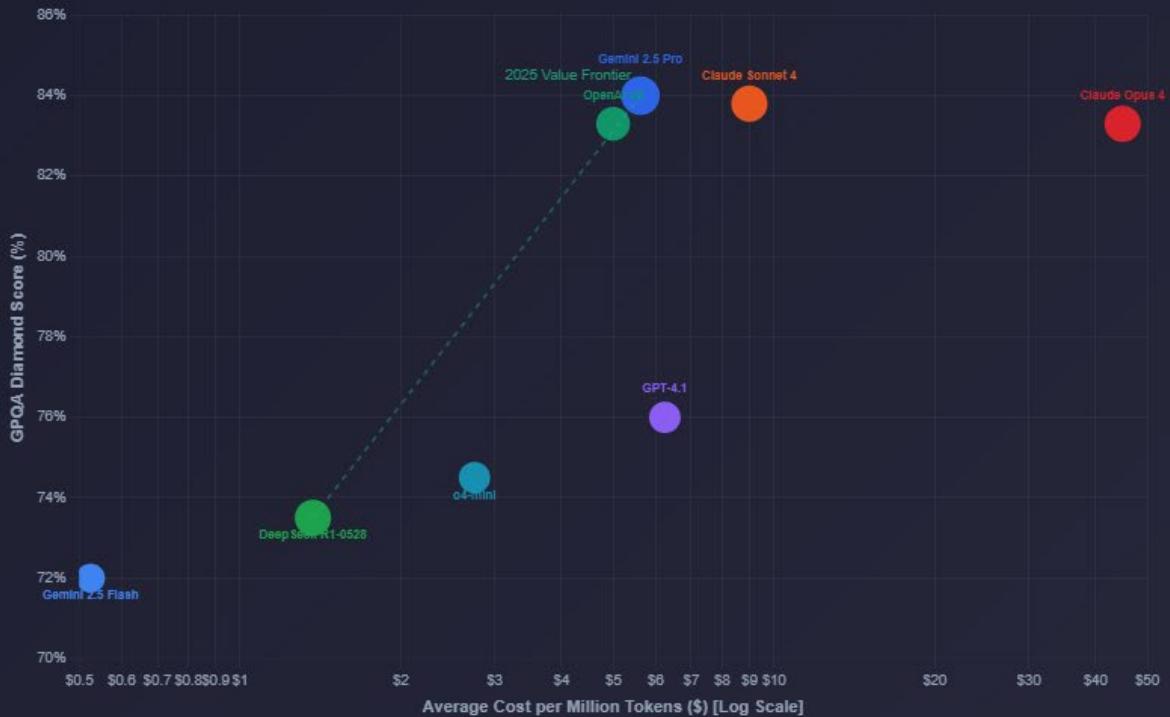
[Model Hallucination](#)

AI Model Intelligence & Economics Platform

Latest Model Releases & Verified Performance Data • June 2025

✓ Updated with Claude 4, Latest Gemini 2.5, DeepSeek R1-0528

Latest AI Model Performance vs Cost - June 2025 Data



GPQA DIAMOND LEADER

84.0%

Gemini 2.5 Pro • Leading AI reasoning

BEST CODING MODEL

72.5%

Claude Opus 4 • SWE-bench leader

VALUE CHAMPION

128.7

DeepSeek R1-0528 • Performance/\$

COST RANGE

136x

\$0.55 to \$75 per 1M output tokens

Information
Visualization
Dashboard
Cost/Performance
Comparison
of Leading AI Models

<https://claude.ai/public/artifacts/8dd54f19-99e0-46c3-8b61-be04336d4d70>

BEST CODING MODEL

72.5%

Claude Opus 4 establishes new state-of-the-art through revolutionary extended thinking methodology, solving real GitHub issues from popular repositories and delivering 3-5x development productivity gains, 40-60% faster bug resolution, and measurably improved code quality for mission-critical software engineering applications.

Claude Opus/Sonnet 4



Software Engineering Excellence

For mission-critical development workflows requiring maximum coding capability, architectural understanding, and development productivity optimization:

Claude Opus 4 (72.5% SWE-bench SOTA)

Claude Sonnet 4 (72.7% cost-efficient)

OpenAI o3 (69.1% competitive)

Strategic Advantage: Claude 4 series dominates through extended thinking innovation, delivering unprecedented 3-5x productivity multipliers for complex development workflows, superior architectural comprehension, and measurable code quality improvements that justify premium pricing for business-critical applications.

GPQA DIAMOND LEADER

84.0%

Gemini 2.5 Pro achieves the highest reasoning performance on PhD-level scientific questions, enabling enterprise strategic analysis, technical due diligence, regulatory compliance, and expert-level decision support across physics, chemistry, and biology domains with 1M token context for comprehensive document analysis.

Gemini 2.5 Pro



Strategic Analysis & Intelligence

For comprehensive research, strategic planning, complex reasoning, and expert-level analytical tasks requiring PhD-level domain expertise:

Gemini 2.5 Pro (84.0% reasoning leader)

Claude Sonnet 4 (83.8% balanced excellence)

OpenAI o3 (83.3% cost-effective)

Context Champion: Gemini 2.5 Pro's industry-leading 1M token context window enables comprehensive enterprise document analysis, strategic intelligence synthesis, and multi-document comparative research that transforms executive decision-making capabilities.

VALUE CHAMPION

128.7

DeepSeek R1-0528 delivers exceptional 87.5% AIME mathematical reasoning performance at \$0.55/\$2.19 pricing structure, enabling 95% cost savings versus premium alternatives while maintaining competitive analytical capabilities, open-source MIT licensing, and self-hosting options for complete data sovereignty.

DeepSeek R1



Value Optimization & Scale

For cost-conscious deployments requiring strong performance with optimal economics, enabling unprecedented scale and budget efficiency:

DeepSeek R1-0528 (87.5% AIME, \$1.37 avg)

OpenAI o4-mini (efficient reasoning)

OpenAI o3 (post-cut pricing)

Efficiency Revolution: DeepSeek R1-0528 delivers enterprise-grade 87.5% AIME mathematical reasoning at revolutionary \$0.55/\$2.19 pricing, enabling 95% cost savings and unprecedented scale economics through open-source MIT licensing and self-hosting capabilities.

AI Model Intelligence & Economics Platform

Top 10 Global AI Models - November 2025 • Including Chinese Leaders

✓ Updated Nov 7: Claude 4.5, GPT-5, Grok 4, DeepSeek V3.1, Qwen 2.5-Max

Top 10 Global AI Models: Performance vs Cost - November 2025



Data Driven
Dashboard,
Guides
Apps and
Analytics

AI-Assisted
Development and
Vibe Coding

<https://claude.ai/public/artifacts/8dd54f19-99e0-46c3-8b61-be04336d4d70>

Where would you like to begin?

Update this app for the current date and models including now top Chinese and Global Models, Top 10 Globally

Researching latest AI model rankings and performance metrics.

I'll search for the latest AI model information to update this with current November 2025 data.

4 steps

GPT-5 Grok 4 pricing API costs November 2025

10 results

Synthesized global and Chinese AI models with current benchmarks and pricing data.

Perfect! I have all the latest data for November 2025. Let me update the app with current models, including the top Chinese AI models.

9 steps

Orchestrated tooltip refinement for updated model information.

Refined label positioning for expanded model roster.

Perfect! I've completely updated the app with the latest November 2025 data. Here's what's new:

Top 10 Global AI Models (Nov 2025)

Western Leaders:

1. **Claude Sonnet 4.5** - 86.5% overall, 77.2% SWE-bench (best coding model)
2. **GPT-5** - 85.8%, aggressive pricing at \$1.25/\$10 with 90% caching discount
3. **Claude Opus 4.1** - 84.5%, deep reasoning specialist
4. **Gemini 2.5 Pro** - 84.0%, massive 2M token context window
5. **Grok 4** - 83.5%, live X/Twitter data integration

Chinese Powerhouses: 6. **DeepSeek V3.1** - 82.0%, trained for only \$5.5M (vs \$100M+ Western models) 7. **Qwen 2.5-Max** - 81.5%, Alibaba's flagship with 89.4 Arena-Hard score 8. **DeepSeek R1** - 80.0%, 87.5% AIME at \$0.55/M (MIT license)

AI Model Intelligence & Economics Platform

Top 10 Global AI Models • November 2025 • Including Chinese Leaders

Updated Nov 7: Claude 4.5, GPT-5, Grok 4, DeepSeek V3.1, Qwen 2.5-Max

Top 10 Global AI Models: Performance vs Cost - November 2025



OVERALL LEADER

86.5%

Claude Sonnet 4.5 • Best coding & reasoning

TOP CHINESE MODEL

82.0%

DeepSeek V3.1 • 13x cheaper than GPT-5

BEST VALUE

119.0

DeepSeek V3.1 • 82.0% / \$0.69 avg cost

COST RANGE

65x

\$0.69 to \$45 per 1M avg tokens

Publish and Copy Link: <https://claude.ai/public/artifacts/378c887b-efdf-4457-9d69-10b728e1641a>

💡 Top Tips for AI-Assisted Development (Vibe Coding)

3) Begin Simply and Build Step by Step

4) Iterative Development Process
Prompt -> Test -> Run -> Repeat



AI Economic Impact on Higher Education

Executive Strategic Overview | Data as of Q2 2025

Federal Reserve

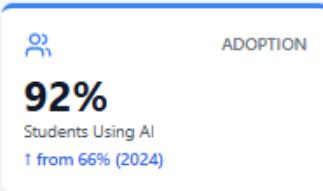
Market Verified

Overview

Employment Crisis

Investment & ROI

Strategic Insights

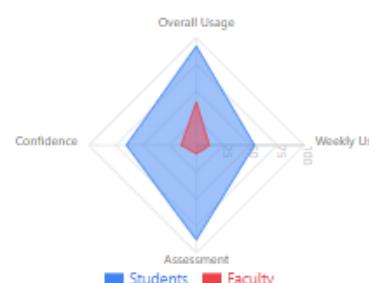


Graduate Employment Crisis



Fed Data: Q1 2025 peak of 5.8%, highest since 2013

Adoption Gap: Students vs Faculty



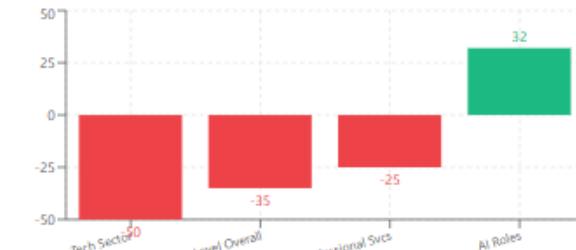
HEPI 2025: 92% student vs 14% faculty teaching confidence

AI Education Market Growth



Market Research: \$7.05B global, 36% CAGR to 2034

Entry-Level Job Impact



Oxford Economics: -35% entry-level since Jan 2023

AI Economic Impact on Higher Education

Executive Strategic Overview | Data as of Q2 2025

Federal Reserve

Market Verified

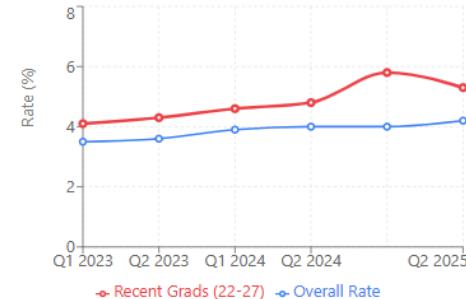
Overview

Employment Crisis

Investment & ROI

Strategic Insights

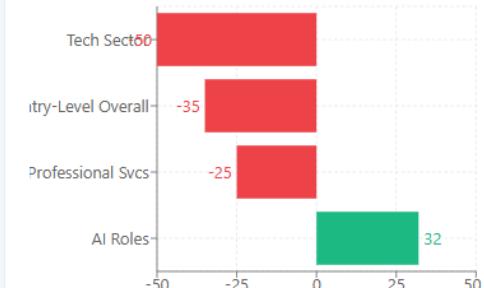
Unemployment Trend Analysis



Key Findings

- Peak unemployment: 5.8% in Q1 2025 (highest since 2013)
- 41% increase from 2023 baseline (4.1%)
- First sustained period above overall rate since 1990
- Source: Federal Reserve Bank of New York & St. Louis

Job Market Disruption



Impact Summary

- Tech hiring down 50% from 2019 pre-pandemic levels
- Overall entry-level declined 35% since January 2023
- AI-related roles up 32% (offsetting traditional losses)
- 49% of Gen Z believe AI reduced college ROI

Link to Source:

<https://claude.ai/public/artifacts/5c72bfbc-2b9e-4123-8649-5f3214e242e7>

<iframe src="https://claude.site/public/artifacts/5c72bfbc-2b9e-4123-8649-5f3214e242e7/embed" title="Claude Artifact" width="100%" height="600" frameborder="0" allow="clipboard-write" allowfullscreen></iframe>

The Prompt Window and Artifact/Code Window

Remix of Interactive Climate Change and Polar Ice Dashboard

RU Could you verify the data but also make this suitable for an administrator at a top university in the US with suitable aesthetics and contextualization.

Verifying data and contextualizing for university administration.

I'll verify the data and create a professional executive dashboard suitable for university administrators.

- 2 steps
- "higher education" AI investment spending US 2024 2025 billions 10 results
- Verified investment data and curated professional dashboard presentation. 18s

Now I'll create a professional executive dashboard with verified data:

AI Economic Impact: Executive Dashboard for Higher Education
Interactive artifact

Get notified when Claude finishes longer tasks like this one.
[Turn on notifications](#)

```
v2 • Latest Copy Publish X  
<div> CardSection <div> CardSectionContent <div>  
  <span className="px-3 py-1 bg-blue-100 text-blue-800 rounded-full font-medium">  
    Federal Reserve Data  
  </span>  
  <span className="px-3 py-1 bg-green-100 text-green-800 rounded-full font-medium">  
    Market Research Verified  
  </span>  
  <span className="px-3 py-1 bg-purple-100 text-purple-800 rounded-full font-medium">  
    Multi-Source Analysis  
  </span>  
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</div>  
</div>  
  
{/* Key Metrics Cards */}  
<div className="max-w-7xl mx-auto mb-8">  
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    <div className="bg-white rounded-lg shadow-md p-6 border-t-4 border-red-500">  
      <div className="flex items-center justify-between mb-2">  
        <AlertCircle className="text-red-500" size={24} />  
        <span className="text-xs text-gray-500 font-medium">CRITICAL</span>  
      </div>  
      <div className="text-3xl font-bold text-gray-900 mb-1">5.8%</div>  
      <div className="text-sm text-gray-600">Peak Recent Grad Unemployment</div>  
      <div className="text-xs text-red-600 mt-2 font-medium">↑ 41% vs 2023 (4.1%)</div>  
    </div>  
  
    <div className="bg-white rounded-lg shadow-md p-6 border-t-4 border-blue-500">  
      <div className="flex items-center justify-between mb-2">  
        <Users className="text-blue-500" size={24} />  
      <div className="flex items-center justify-between mb-2">  
        <Users className="text-blue-500" size={24} />
```

Please Verify Primary Sources

PRIMARY SOURCES CITED:

1. [Federal Reserve Bank of New York](#) - Labor Market for Recent College Graduates
2. **Federal Reserve Bank of St. Louis** - Economic research and analysis
3. **HEPI (Higher Education Policy Institute)** - Student Generative AI Survey 2025
4. **Precedence Research** - AI in Education Market analysis
5. **Global Market Insights (GMI)** - Market sizing studies
6. **Oxford Economics** - Graduate employment research
7. **SignalFire** - Tech hiring and VC research
8. **Ellucian** - Higher education technology surveys
9. **Ithaka S+R** - Faculty AI adoption research
10. **Digital Education Council** - Global student surveys
11. **Government of Canada** - Budget 2024 documents
12. **New York State** - Budget documents
13. **Universities Canada** - Research and statistics
14. **Chronicle of Higher Education** - Institutional reporting
15. **Stanford AI Index Report 2025** - Global AI trends

All data points in the dashboard are verifiable from authoritative primary sources.

Specify Other Areas needed

Strategic Implications, Institutional, Investment, Budget Impact Scenarios

! Strategic Implications for Leadership

Workforce Readiness Crisis

With 92% of students using AI but only 14% of faculty confident teaching with it, institutions risk graduating students unprepared for an AI-transformed workplace. Entry-level jobs—traditionally the bridge between education and career—are declining rapidly (50% in tech, 35% overall since 2023).

Investment Imperative

The \$1.85B US AI education market (2025) represents both opportunity and competitive pressure. Peer institutions are making substantial investments: Empire AI (\$275M), major research universities (\$50M+ partnerships). Delayed action risks institutional competitiveness.

ROI Opportunity

Administrative automation offers tangible returns: 10-15% workload reduction translating to \$5-10M annual savings for large institutions. However, initial infrastructure investment (2-5% operating budget) and ongoing faculty development (1-3%) require strategic budget reallocation.

Faculty Development Gap

The adoption divide isn't just about technology—it's about pedagogy and institutional culture. 93% of higher ed staff expect to expand AI use, yet implementation lags. Success requires comprehensive faculty training, clear policies, and change management beyond IT deployment.

Data Sources: Federal Reserve Banks (NY, St. Louis), HEPI 2025, Digital Education Council, Ellucian, Market Research (Precedence Research, GMI), Oxford Economics, SignalFire, NACUBO, Universities Canada, Stanford AI Index 2025

AI Economic Impact on Higher Education

Executive Strategic Overview | Data as of Q2 2025

Overview

Employment Crisis

\$ Investment & ROI

Strategic Insights

Major Institutional Investments

UC Berkeley **\$392M**
Federal Research

Empire AI (NY) **\$275M**
State Initiative

U. of Florida **\$50M**
Nvidia Partner

Stony Brook **\$15M**
AI Institute

Budget Impact Scenarios

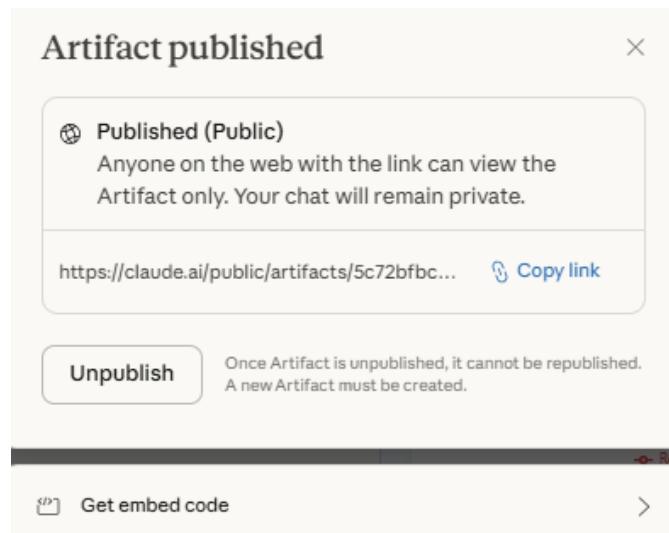
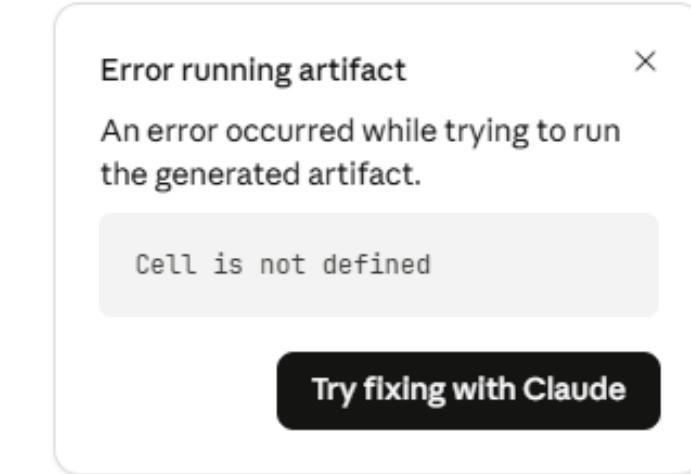
Area	Low	Mid	High
AI Infrastructure	2%	5%	10%
Admin Savings	+5%	+10%	+15%
Faculty Training	1%	3%	5%
AI Literacy Programs	1%	2%	4%

ROI Evidence: Georgia State's AI chatbot saves \$5-10M annually (10-15% admin workload reduction). UMaine: \$500K AI budget = 0.7% of operating budget.

Additional: Canada committed \$2.4B in Budget 2024, including \$2B over 5 years for AI compute infrastructure.

Correcting Errors Running Artifact

Repeat and Iterate Until App Achieved (7 Versions)



RU Place visualizations near top and Make suitable for single page presentation and navigation.

2 steps

Refactored code by swapping Growth terminology for TrendingUp.

Wait, I did that backwards. Let me fix it properly.

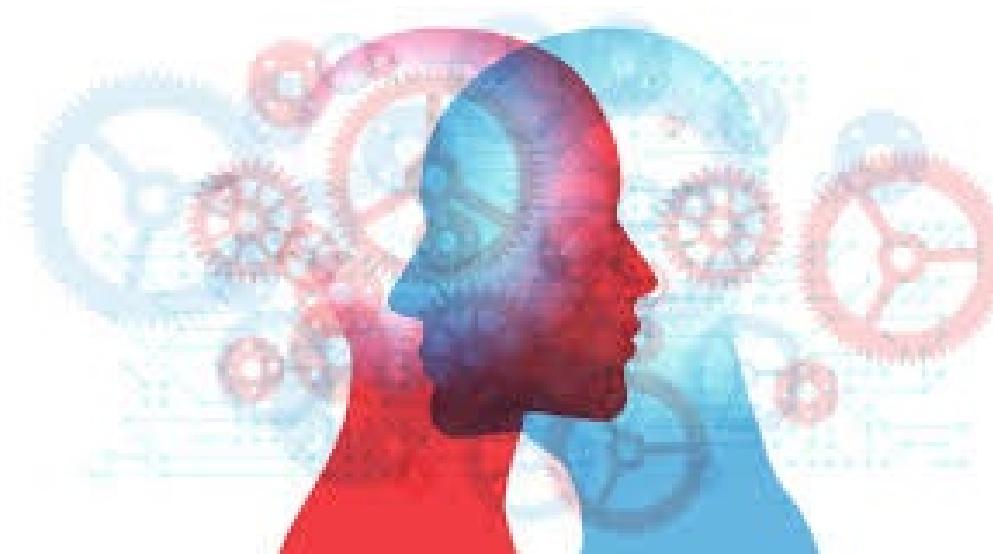
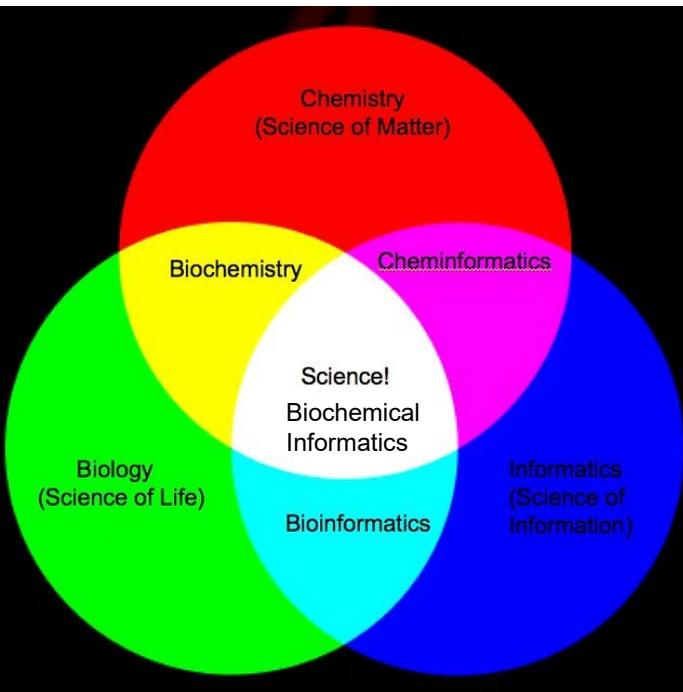
Perfect! I've restructured the dashboard for single-page presentation with:

Navigation Features:

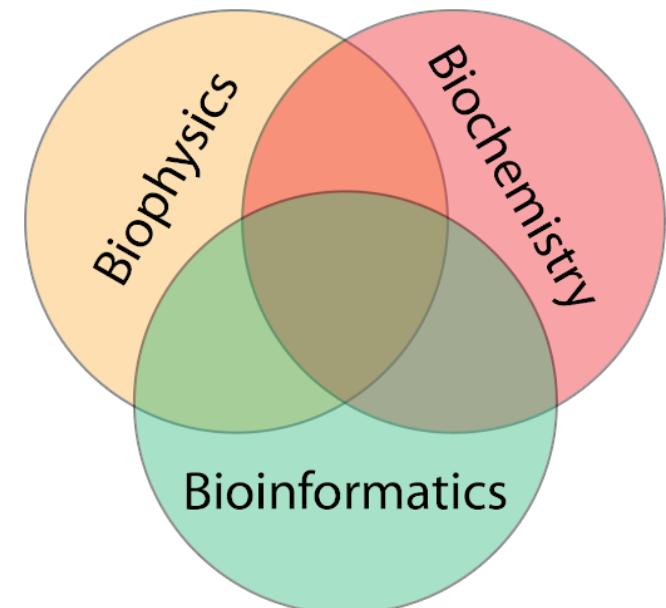
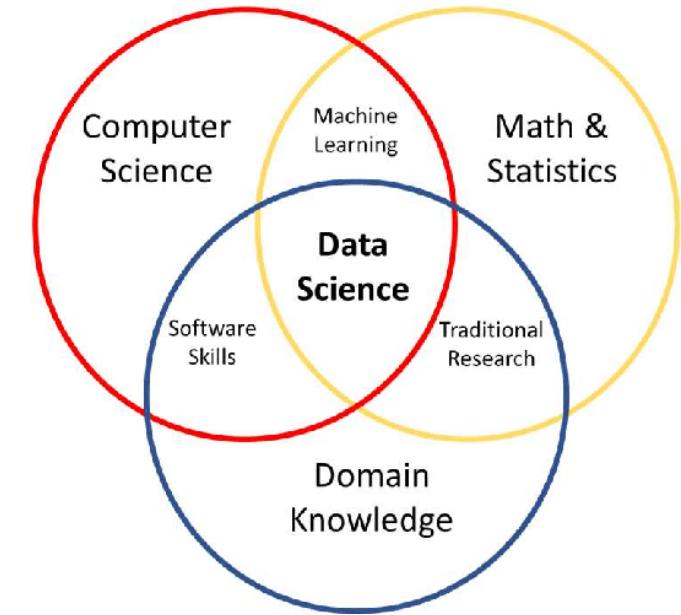
- 4 tabbed views at the top: Overview, Employment Crisis, Investment & ROI, Strategic Insights
- Easy switching between different perspectives
- All content fits on one screen per view

Layout Improvements:

Research Models are Very Good at Interdisciplinary Synthesis of Disparate Domains, Making Analogies, Statistically Pattern Matching



Interdisciplinary Research



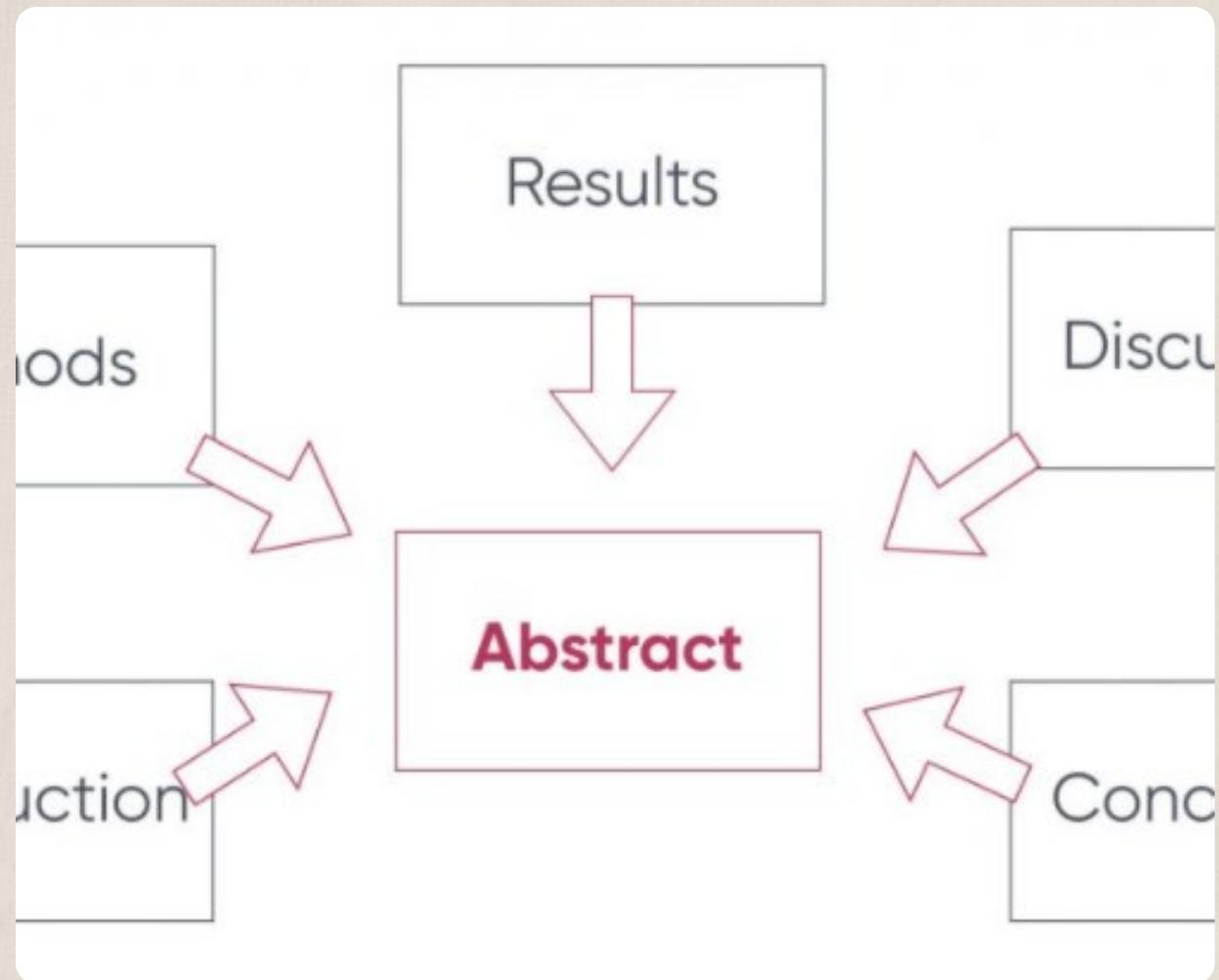
Interdisciplinary Research Synthesis

AI excels at making connections across disparate domains, fostering new insights through analogies and pattern matching.

 Biochemical Informatics

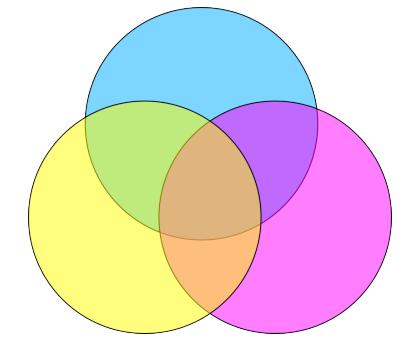
 Systematic Review Frameworks

 Research Insight Architects



Jungian Psychoanalysis (Personas) + Exercise and Nutrition App

<https://claude.ai/public/artifacts/8a46e56b-0a64-46b7-9ee6-30fea9ca0211>



Psychiatrist/Psychoanalyst
Persona's: Dr: C.G Jung,
James Hillman,
Dr. Marie Louis Von Franz

Individuation

A journey toward psychological wholeness

"Your vision becomes clear when you look into your heart. Who looks outside, dreams. Who looks inside, awakens."

—C.G. Jung

Begin Your Journey

Spartan Amazonia

Mind-Body Training System

Integrating movement, mindfulness, and nutrition for optimal performance.

Begin Your Journey

What physical and psychic levels and balance are you able to achieve?

It's afternoon and I'm thinking about yoga...

Initiate Suggestions

Health Personas Nutritionist, Personal Trainer, Sports Medicine M.D., Physiotherapist, Yoga/Mobility Trainer

Urban Spartan

Elite Performance Optimization System

For High-Performing Men Who Demand Peak Performance

Start Your Optimization

Preview Your Dashboard

See what you'll get after 30 days of tracking

30 Days Tracked

4.3 Energy Level

4.1 Focus Level

8.2h Sleep Average

Performance Profile

Energy

Focus

Mood

Sleep

Stress

Libido



The Evolution of Scientific Knowledge

AI is transforming research by creating new methodological infrastructures that enable thousands of subsequent discoveries.



Single methodological innovations birth new fields.

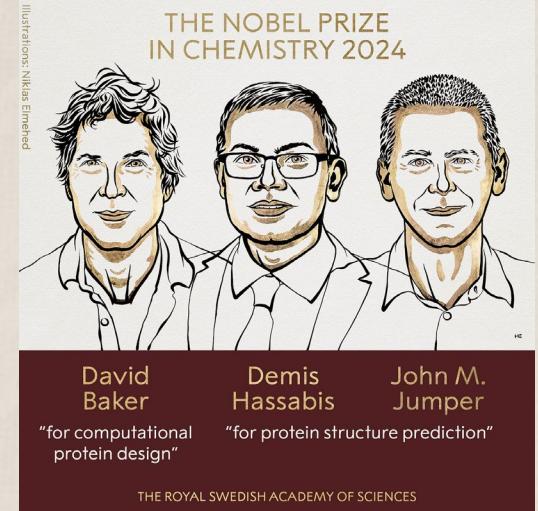


New common languages are created across disciplines.



Cumulative adoption builds bridges for research.

The Road to ASI: A Timeline of Innovation



1949
Monte Carlo Method



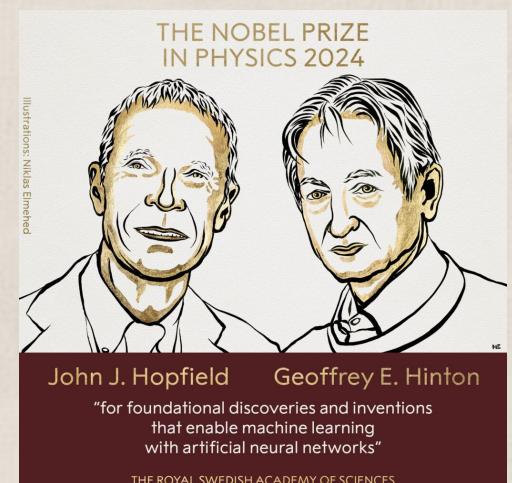
2020
GPT-3, AlphaGo



2024
OpenAI o1
Nobel Prizes, Hinton, Hassabis,
Protein Folding, Navier-Stokes
Equation



2025
Kimi K2 Thinking



AI Literacy Curriculum Builder

<https://bit.ly/45AAaLc>

Dr. Raymond Uzwyshyn,
University of California, Riverside
raymondu@ucr.edu

<https://www.linkedin.com/in/rayuzwyshyn/>



Multi-Theorist Curriculum Builder

Design AI Literacy Education Through Multiple Critical Lenses

Choose from Leading Theorists in Science, Technology & Society Studies



Multiple Theoretical Frameworks

Choose from 6+ leading theorists including Latour, Hayles, Haraway, Benjamin, Winner, and Noble



Flexible Implementation

Adaptable curricula for K-12 and higher education with customizable approaches



Research-Based Design

Curricula grounded in scholarly research and proven pedagogical methods

Select Theoretical Framework >

Current Frameworks Available



Bruno Latour (Actor-Network Theory): Understanding AI as socio-technical networks where humans, machines, and social relationships are interconnected actors. Laboratory Life



N. Katherine Hayles (Posthuman & Cybernetic Theory): Exploring how AI challenges traditional notions of human consciousness, embodiment and technosymbiosis. Essential works: How We Became Posthuman, Unthought, From Bacteria to AI



Donna Haraway (Cyborg Theory & STS): Examining AI through a feminist angles of situated knowledge. Focus on relationality and breaking traditional categories. Essential works: A Cyborg Manifesto, Situated Knowledges

This learning activities and lesson plan builder app allows educators to quickly design AI literacy curricula

It is inspired by the lens of several leading AI and science, technology, society theorists.

Select Theoretical Framework

Choose a leading theorist whose work will guide your AI literacy curriculum design. Each offers unique insights into technology, society, and human experience.



Bruno Latour

Actor-Network Theory

Technology as Socio-Technical Networks

Understanding AI through networks of humans, machines, and social relationships

KEY FOCUS AREAS

Networks, Agency, Hybrids

ESSENTIAL WORKS

Reassembling the Social, Science in Action, We Have Never Been Modern



N. Katherine Hayles

Posthuman & Cybernetic Theory

Human-Machine Consciousness

Exploring how AI challenges traditional notions of human consciousness and embodiment

KEY FOCUS AREAS

Consciousness, Embodiment, Information

ESSENTIAL WORKS

How We Became Posthuman, Unthought, The Cognitive Nonconscious



Donna Haraway

Cyborg Theory & Feminist STS

Breaking Boundaries

Examining AI through feminist lens of boundary dissolution and situated knowledge

KEY FOCUS AREAS

Boundaries, Power, Situated Knowledge

ESSENTIAL WORKS

A Cyborg Manifesto, Situated Knowledges, Staying with the Trouble

Advanced Customization

Tailored Towards

Various Pedagogical Frameworks

Student Centered Design

Institutional Integration

<https://bit.ly/45AAaLc>



Advanced Customization

N. Katherine Hayles - Posthuman & Cybernetic Theory

Tailor your AI literacy curriculum to your specific pedagogical context, student population, and institutional requirements using N. Katherine Hayles's framework.

Ready for Professional Implementation

Your curriculum foundation is complete. All customizations below enhance and personalize the educational experience.

Pedagogical Framework

Core teaching approach

Student-Centered Design

Inclusive learning support

Institutional Integration

Standards & administration

Pedagogical Framework Configuration

Define the foundational teaching approach for your N. Katherine Hayles-based curriculum

Primary Subject Integration

Choose primary disciplinary integration...

How will AI literacy integrate with your existing curricular framework?

Temporal Structure & Duration

Select optimal time allocation...

What instructional time commitment can you dedicate to this curriculum?

Pedagogical Methodologies

Hands-on Constructivist Learning

Students build knowledge through direct manipulation and creation

Socratic Inquiry & Dialogue

Knowledge construction through guided questioning and discussion

Select Educational Levels

Choose the educational levels for your AI literacy curriculum, from elementary through graduate studies. Each level uses age-appropriate Latour Science, Technology and Society concepts.

K-2: Early Elementary

Ages 5-7 • Foundation Building

Help little ones understand AI as "smart helpers" that work with people to solve problems. Focus on simple connections between tools, people, and tasks.

TEACHING FOCUS

Who helps us? How do helpers work together?

KEY CONCEPTS

Smart Helpers, Following Friends, Tool Networks

TEACHING NOTES

Use concrete examples like Alexa, tablet games, or classroom computers. Keep it playful and hands-on!

3-5: Upper Elementary

Ages 8-10 • Network Explorers

Students explore how technology connects people and things in networks. Introduction to the idea that smart tools need many parts working together.

TEACHING FOCUS

Mapping connections: How do smart tools connect people, information, and machines?

KEY CONCEPTS

Connection Maps, Smart Tool Teams, Helper Networks, Simple Bias

TEACHING NOTES

Students can draw network maps and trace how information flows. Great age for hands-on exploration of cause and effect.

6-8: Middle School

Ages 11-13 • Actor-Network Detectives

Developing critical thinking about AI systems as networks where humans, data, algorithms, and institutions all play active roles in shaping outcomes.

TEACHING FOCUS

Actor-Network Theory foundations: How do different "actors" (people, data, code, companies) work together in AI systems?

KEY CONCEPTS

AI Networks, Data Actors, Human-AI Partnerships, Bias Detection, Network Mapping

TEACHING NOTES

Students can handle more complexity. Great for controversy mapping activities and beginning ethical discussions about AI fairness.

9-12: High School

Ages 14-18 • Science, Technology and Society Critical Analysts

Sophisticated analysis of AI systems using Science, Technology and Society methodology. Students examine how AI shapes and is shaped by social, political, and economic forces.

TEACHING FOCUS

Complete ANT analysis: Understanding AI as socio-technical assemblages, controversy mapping, and modes of existence across different domains.

KEY CONCEPTS

ANT Methodology, Controversy Mapping, AI Ethics & Politics, Network Power Dynamics, Hybrid Analysis

TEACHING NOTES

Students ready for original research projects. Can engage with primary Latour texts and conduct their own network analyses of AI systems.

Higher Education Levels

Undergraduate

Ages 18-22 • Science, Technology and Society Researchers

Advanced application of Latourian Science, Technology and Society to contemporary AI challenges. Students engage in original research using Actor-Network Theory, examining AI as distributed socio-technical assemblages. Students develop sophisticated analytical frameworks for understanding AI as socio-technical assemblages. They learn to conduct systematic investigations of AI networks using empirical Actor-Network Theory methodologies.

RESEARCH FOCUS

Independent research using Latour's complete theoretical apparatus: modes of existence, terrestrial politics, and compositional approaches to AI governance.

ADVANCED CONCEPTS

ANT Research Methods, Terrestrial Politics, AI Assemblage Theory, Global Network Analysis, Compositional AI Ethics

IMPLEMENTATION NOTES

Students should engage directly with Latour's theoretical works and conduct original empirical research on AI networks. Suitable for thesis projects and independent study.

Graduate Level

Masters & Ph.D. • Advanced Science, Technology and Society Scholars

Sophisticated theoretical and methodological engagement with Latour's complete corpus applied to cutting-edge AI research. Students develop original theoretical contributions and conduct extensive empirical investigations. Advanced scholars engage with the epistemological and ontological complexities of Latour's theoretical apparatus, developing novel applications to contemporary AI phenomena. Students contribute original theoretical insights while conducting rigorous ethnographic investigations of AI assemblages within complex institutional and global networks.

THEORETICAL FOCUS

Mastery of Latourian ontology and epistemology: advanced ANT, diplomatic negotiations with AI assemblages, compositional politics, and terrestrial responses to AI's planetary implications.

ADVANCED CONCEPTS

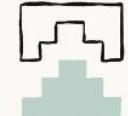
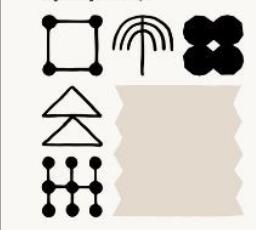
Advanced ANT Theory, Diplomatic AI Relations, Compositional Politics, Planetary AI Networks, Ontological AI Research

Theoretical Innovation

SCHOLARLY IMPLEMENTATION

Present and Future Steps

- 1) Anthropic Academy
Claude Sonnet 4.5 /Opus 4.0
- 2) AI Code Editors
(From Simplest to most complex:
 - a) Loveable
 - b) Windsurf/Replit
 - c) Cursor
 - d) Claude Code
- 3) Other Coding Models: GPT 5, Grok 3, Gemini Qwen 3 Series, Kimi K2 Thinking

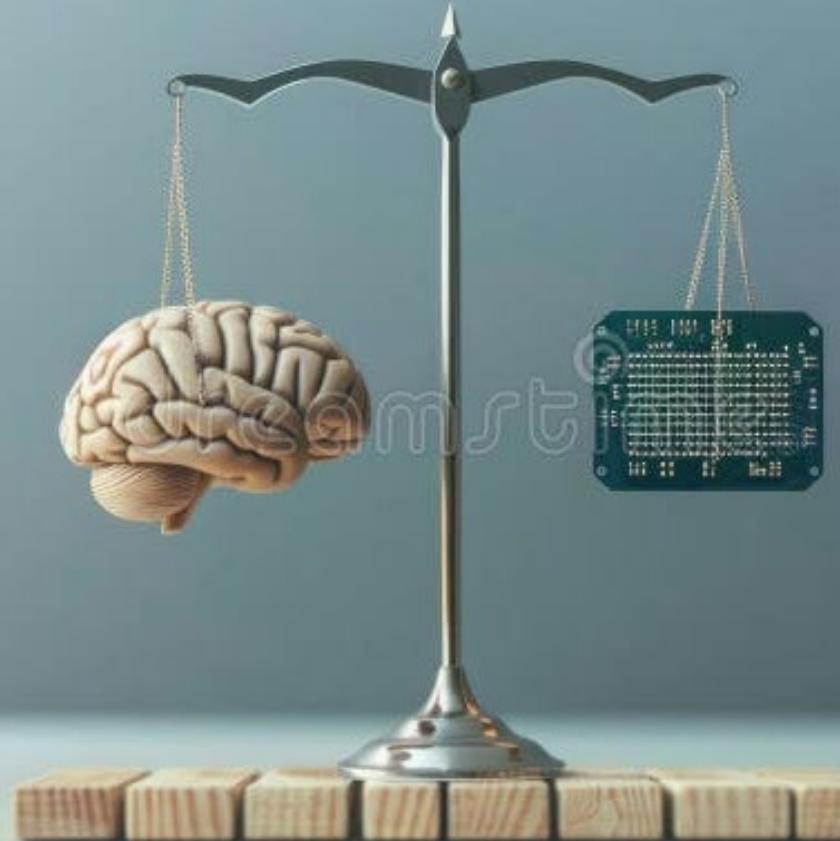
 <p>Engineering at Anthropic</p> <p>Building effective agents</p>	<p>ANTHROPIC</p> <p>Documentation</p> <p>Prompt engineering overview</p>	 <p>AI Fluency: The AI Fluency Framework</p> <p>Learn to collaborate with AI systems effectively, efficiently, ethically, and safely</p>
 <p>Engineering at Anthropic</p> <p>Claude Code: Best practices for agentic coding</p>	<p>Anthropic Academy</p> <p>Build with Claude</p> <p>Start developing Claude-powered applications with our comprehensive API guides and best practices</p>	 <p>Anthropic Academy</p> <p>Claude for Personal</p> <p>Discover how to leverage Claude's capabilities for your individual projects and daily tasks</p>
 <p>Anthropic Academy</p> <p>Claude for Work</p> <p>Learn to implement Claude across your organization and maximize team productivity</p>	<p><i>Peonam Soni</i></p> <p>Anthropic Academy</p>	

<https://www.anthropic.com/learn>

Ethical Considerations

Responsible AI development requires awareness of potential pitfalls and a commitment to best practices.

- ⌚ Be aware of AI hallucinations and biases.
- 🛡 Validate information with reliable sources.
- ⌚ Respect IP through fair use and proper licensing.



❖ Ethical Considerations



AI Hallucinations

Maintain awareness of AI hallucinations, which are probabilistically likely but factually incorrect outputs, requiring careful validation.

Bias Awareness

Be aware of potential biases in AI outputs stemming from training data, ensuring fairness and accuracy in applications.

Intellectual Property

Respect intellectual property by using fair use for educational purposes and properly licensing material for commercial applications.

Human Judgment

Consider AI as probabilistic tools requiring human judgment rather than infallible oracles, ensuring responsible use and development.

Customizable Data Driven Dashboards, Interactive Data Visualization and Information Visualization App Models

[NASDAQ Corporations Across Demis Hassabis Probability Landscape](#)

[Landscape](#). (Business App Mapping Innovation Stages to Market Capitalization. June 2025.

[AI's Impact on Knowledge Workers](#): Real-Time Analysis of Economic Transformation on Professional Work v.6 (Interactive Data Visualization). June 2025

[AI Model Intelligence and Economics Dashboard , Version 14 Revision](#). (Price Performance, Ranking, Market Intelligence). June 2025.

[Athena Capital Financial Derivatives Sell Side Puts Quant App . V. 2](#) FinTech. (AI API). May 2025.

[AI Innovation in Academic Research Libraries. Advanced Data Analytics and Visualization Dashboard](#). May 2025.

[NASDAQ Companies Mapped to Demis Hassabis Creativity Architecture](#). April 2025.

[Advanced Citation & LinkedIn Analysis Dashboard](#). Interactive Visualization so Citation Patterns, knowledge flows and LinkedIn Post Performance. April 2025.

[Complex Treasury Bond ETF Yield Relationships](#) (TLT). Interactive Visualization of TLT Price relationship vs Treasury Yields and Federal Reserve Fund Rate.

[Enhanced Socio-Economic Analysis of LinkedIn User Profile Interest Networks](#). Interactive Visualization

Instructions

- 1) Sign-Up for Claude.ai (Free)
- 2) Review Links
- 3) To Customize: Press Customize Button
 - a) Upload Data (Spreadsheet/Excel or Other) or
 - b) Ask Claude to Perform Deep Research
 - c) Ask Claude to Search and Find Data
 - d) Customize app to your specifications
 - e) Send me a quick note with the link if you do anything impressive raymondu@ucr.edu
 - f) for educational/non-commercial use only

Customizable AI-Assisted Coding Models

React, Node, Anthropic Artifacts, Opus/Sonnet AI API

[AI Literacy Activities and Planning Curriculum Builder](#) [Multi-Literacy Curriculum Builder](#): AI Literacy Education Through Multiple Critical Lenses. (AI API Enabled) August 2025. [Further Info](#)

[Move 37: The Art of Counterintuitive Discovery](#). Research Discovery Engine Modeled After Dennis Hassabis AlphaGo Creative AI Methodology. (AI API App) July 2025.

[UC Research Starter: University of California AI Powered Brainstorming Application for Research Faculty and Graduate Students.](#) (AI API App) July 2025.

Jungian Psychotherapeutic Therapy App: Individuation. Hillman, von Franz, Jung. (AI API App). July, 2025.

[Symp Composer](#): Note Taking Creative Idea Brainstorming Scratch Pad (Experimental). July 2025.

[Bruno Latour AI Literacy Builder](#): Based on Latour's Science, Technology and Society Framework. [Version 2 \(Enhanced, Special Needs, Curriculum Standards\)](#). (AI API Enabled) June 2025.

[Spartan Amazonia: Mind-Body Training System](#): Integrating, Movement Mindfulness and Nutrition for Optimal Performance (AI API app). June 2025.

[Athena Deep Learning: Computational Creativity for Strategic Business Intelligence](#). Business App v.11, [V.52 Simplified](#) (AI API app). June 2025.

[Research Insights Architect: PRISMA Systematic Review Framework App](#). June 2025. [Urban Spartan: Men's Health App](#). May 2025.

Further Sources, Guides and Background

AI Coding Tools Quick Comparison and Beginner's Guide

<https://www.linkedin.com/pulse/ai-coding-tools-quick-comparison-guide-2025-raymond-uzwyshyn-ph-d-huyuc/>

The Rise of AI Application Engineers

https://www.linkedin.com/posts/rayuzwyshyn_vibecoding-aiapplicationengineer-aiprogramming-activity-7349146084201373701-Lxla/

Vibe Coding Cursor + Sonnet For Next Level AI Coding

https://www.linkedin.com/posts/rayuzwyshyn_cursor-claudesonnet4-claudeopus4-activity-7338241601997107200-cWOJ/

AI Code Composers

https://www.linkedin.com/posts/rayuzwyshyn_ai-code-composers-the-next-frontier-in-activity-7259711548049285120-KFn4/

Interdisciplinary Thinking for AI

<https://www.linkedin.com/pulse/interdisciplinary-thinking-era-ai-raymond-uzwyshyn-ph-d--yodqc/>

AI/Ph.D. Level Research Collaboration

<https://www.linkedin.com/pulse/interdisciplinary-thinking-era-ai-raymond-uzwyshyn-ph-d--yodqc/>

Human-AI Ph.D. Level Co-Intelligence

<https://www.linkedin.com/pulse/humanai-phd-level-co-intelligence-2025-2035-roadmaps-uzwyshyn-ph-d--n1h3c/>

New Models for Human-AI Co-Intelligence

<https://www.linkedin.com/pulse/co-intelligence-entangled-partnerships-modles-raymond-uzwyshyn-ph-d-5mgmc/>

Topology of Collective Intelligence

<https://www.linkedin.com/pulse/nodes-dream-mapping-emerging-topology-human-ai-raymond-uzwyshyn-ph-d--wfdwc/?trackingId=HD0kC1o4S06cH2qZktB3lg%3D%3D>

Discovery, AI and Academic Research

<https://www.linkedin.com/pulse/deep-seek-demis-benchmarking-r1-comparative-paper-ai-uzwyshyn-ph-d--588ic>

AI and Scientific Knowledge in the 21st Century

<https://www.linkedin.com/pulse/invisible-architecture-knowledge-raymond-uzwyshyn-ph-d--m8mrc>

Multimodality, Humanoid Robots and ASI

<https://www.linkedin.com/pulse/humanoid-robots-multimodality-path-towards-raymond-uzwyshyn-ph-d-jgjfc>

Thank you for Attending!

Comments and Questions

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