Engineering the Future with Generative AI and Agentic AI?

MATLA Expo – Krakow June 2026

Mischa Kim

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COMPANY

Emmi joins Mistral to accelerate the AI-native industry

MAY 23, 2026 · MISTRAL AI

Horizon Europe: EU's key funding program for research and innovation

Tackle climate change, help achieve the UN's Sustainable Development Goals and boost the EU's competitiveness and growth

Funding (2021-2027): 95.5 BEUR

2025: 7.3 BEUR, 3,422 proposals

35% of the budget will support climate objectives

8.8% will target biodiversity

36% for digital transformation

€1.6 billion for AI development

Screen shot from: https://research-and-innovation.ec.europa.eu/

Centre of Excellence for Precise Phenotyping and BioDataBanking

Fact Sheet | Results

Project description

DE EN ES FR IT PL

Personalised medicine for cancer and brain disorders in Poland

Personalised medicine is advancing rapidly with improved computational power and AI-driven big data integration, offering promising prospects for healthcare. However, access to these technologies remains limited in central and eastern Europe. The EU-funded P4Health project aims to address this gap by establishing a Centre of Excellence for Precise Phenotyping and BioDataBanking at Lukasiewicz-PORT in Wroclaw, Poland. This centre will harness

SIEC BADAWCZA LUKASIEWICZ - PORT POLSKI OSRODEK ROZWOJU TECHNOLOGII
Poland

KING'S COLLEGE LONDON
United Kingdom

CENTRE EUROPEEN DE RECHERCHE EN BIOLOGIE ET EN MEDECINE
France

Project Information

P4Health
Grant agreement ID: 101136375

DOI
10.3030/101136375

EC signature date
4 November 2024

Start date
1 November 2024

End date
31 October 2030

Funded under
Widening participation and spreading excellence

Total cost
€ 15 000 000,00

EU contribution
€ 15 000 000,00

Generative AI for Industrial Design Engineering

Fact Sheet

Project description

DE EN ES FR IT PL

Training experts in generative AI for industrial design engineering

The rapid advancement of AI technologies, particularly generative AI and large language models has profoundly impacted and transformed various business sectors. However, this growth has also created a pressing demand for experts and specialists in AI and engineering disciplines. To address this need, supported by the Marie Skłodowska-Curie Actions programme, the GenAIDE project will establish a pioneering doctoral training

Honda Research Institute Europe GmbH

Germany

THE MATHWORKS LIMITED

United Kingdom

(15 collaborating institutions in total)

Project Information

GenAIDE

Grant agreement ID: 101226927

DOI

10.3030/101226927

EC signature date

23 June 2025

Start date

1 October 2025

End date

30 September 2029

Funded under

Marie Skłodowska-Curie Actions (MSCA)

Total cost

No data

EU contribution

€ 3 717 997,20

An official website of the European Union How do you know?

Search

Help Tools

contenttype='project' AND ('generative AI')

Include archived content

Back to search filters

1 719 results for 'generative AI'

Last update Title

NEWS ARTICLE | 16 July 2025 | Directorate-General for Research and Innovation | 4 min read

Horizon Europe 2028 - 2034: twice bigger, simpler, faster and more impactful

As part of the next long-term EU budget 2028-2034, the Commission is proposing to double the budget of the research and innovation framework programme to €175 billion. The new Horizon Europe will boost Europe's competitiveness and fund solutions to real-world challenges, from AI that supports doctors, to satellites that protect farmers, to cleaner, smarter ways to move, live, and work.

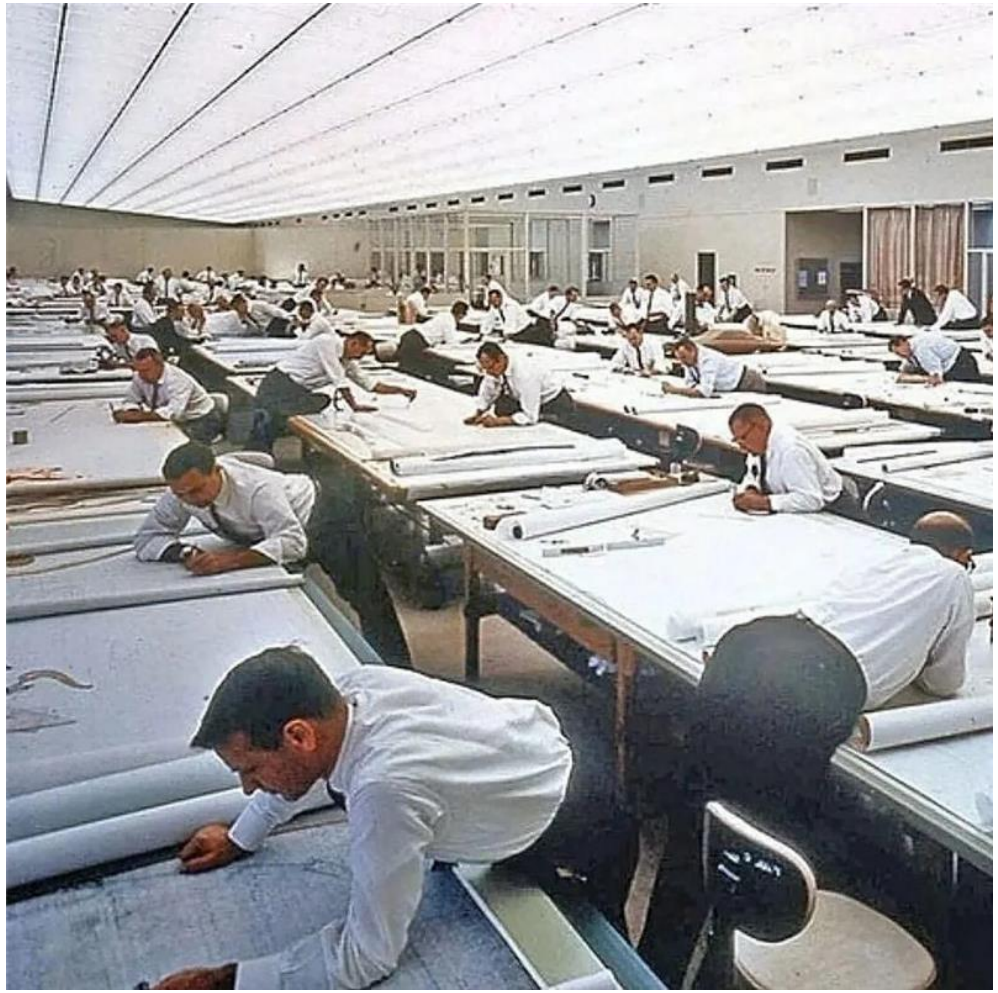
Screen shot from: https://research-and-innovation.ec.europa.eu/

We deliver impact with you

Transforming how you use MATLAB & Simulink,
and how you collaborate, innovate, and scale globally

- Connect with the right partners across industry and academia
- Co-create and win funded projects (e.g., Horizon Europe)
- Work side-by-side on your technical challenges to accelerate implementation
- Showcase your success globally and amplify your impact

GenAI is a Major Tech Disruption...



General Motors engineers in 1956, before AutoCAD

Source: rarehistoricalphotos.com

What this means for engineers

- **Fundamentals** remain unchanged
  - An even stronger and wider engineering background to interact with Gen AI
  - Solid background will enable critical thinking for strategic decision making

- Shift toward **AI-equipped system-level engineers**
  - Discipline expertise engineers together with system-level engineers
  - AI will be a default skill like mathematics or statistics

- Better **use of time**
  - Less low-level coding, debugging and understanding syntax
  - More time for multiple solution exploration and optimization

Previous reports from past years were not wrong

2024

Gartner

Through 2027, GenAI will spawn new roles in software engineering and operations, requiring **80% of the engineering workforce to upskill**

2025

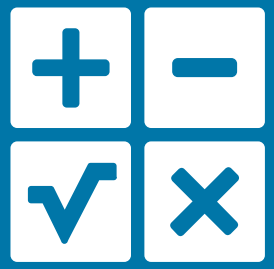
94% of employers say they're likely to hire **candidates with GenAI credentials**

75% of employers prefer hiring less-experienced candidates with **GenAI skills** over more experienced ones without skills

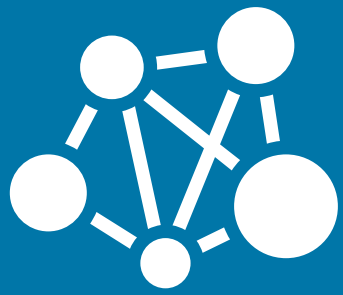
Source: Gartner (2024) and https://www.coursera.org/skills-reports/global

Throughout history, new technologies reshaped engineering…

Steam Engine c.1780s



Digital Calculators c.1970s

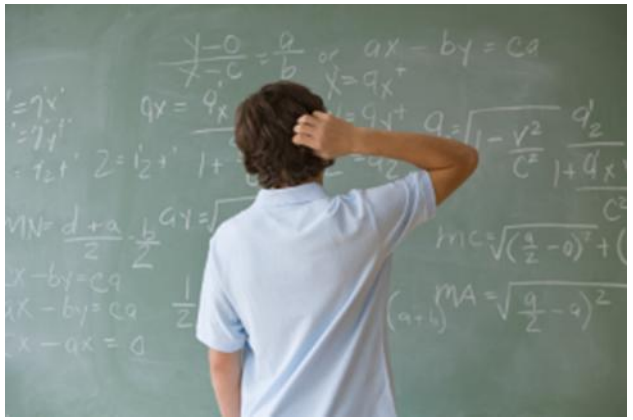


World Wide Web c.1990s

… and for the most part we've been more productive from it

What does daily use of Generative AI look like?

Students



- AI as a Project Partner
  "Help me write this code"
- AI as a Tutor
  "Explain this code"
- AI as a Feedback Generator
  "What's wrong with my code?"

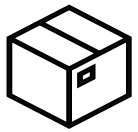
Academia

- Create syllabus for a new course
- Create didactical content
- Summarize research review
- Concept clarification and learning

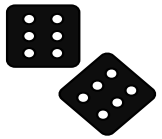
Industry

- Enhance customer experience
- Accelerate time-to-market
- Increase efficiency and automation (*decision support across the lifecycle*)
- Unlock engineering productivity with model-based workflows

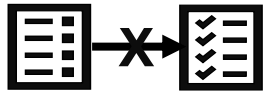
GenAI is very powerful. But has some limitations…



Black Box



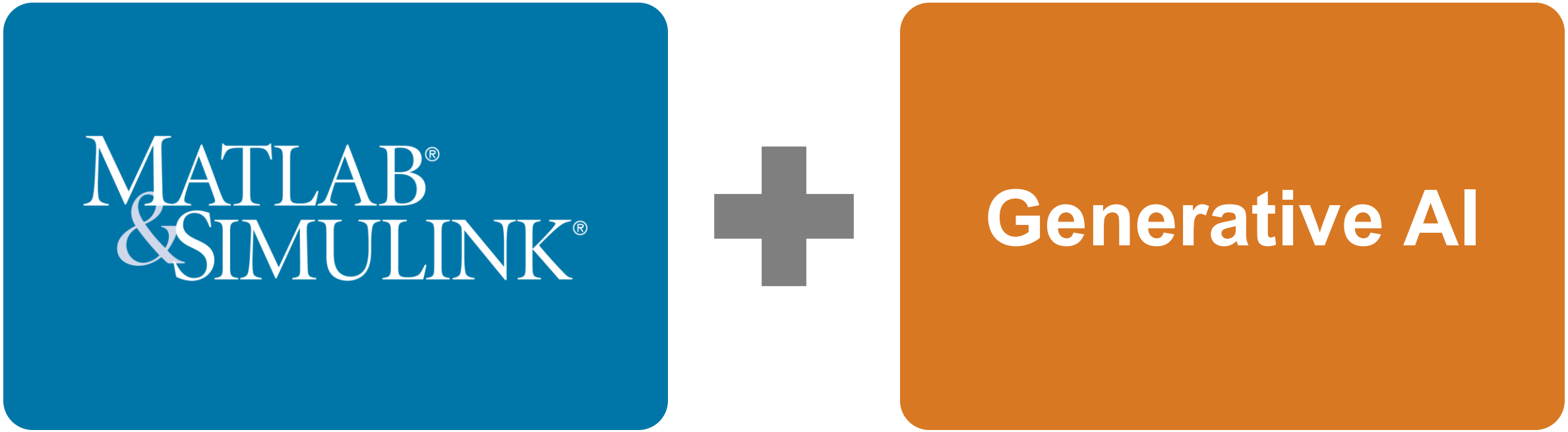
Non-Deterministic



Traceability Gap

Inconsistent Quality

Combine Gen AI with trusted, validated tools from MathWorks



Turn probabilistic output into verifiable engineering results.

Evolution of Generative AI with MATLAB

Generative AI with LLMs

Text-completion assistants that answer questions

"Ask and Answer"

Generative AI and Tools

LLMs integrated into tools to assist user with context

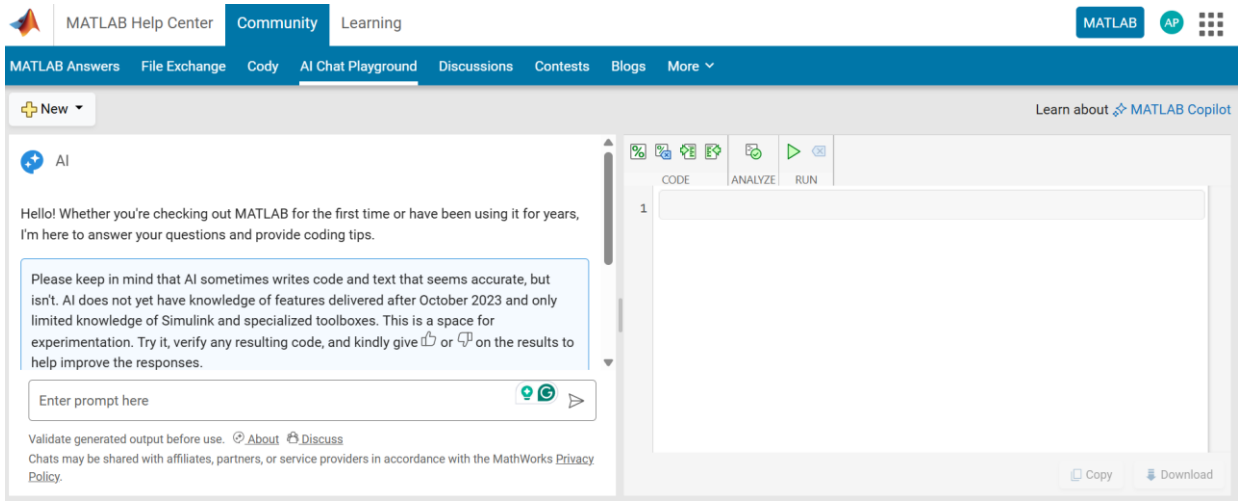
“Work with me”

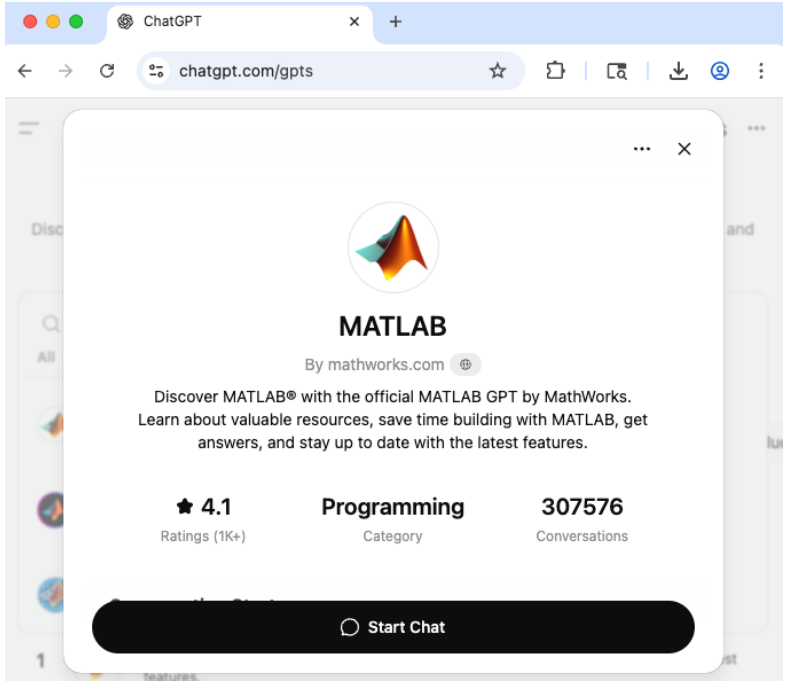
AI Agents and Agentic AI

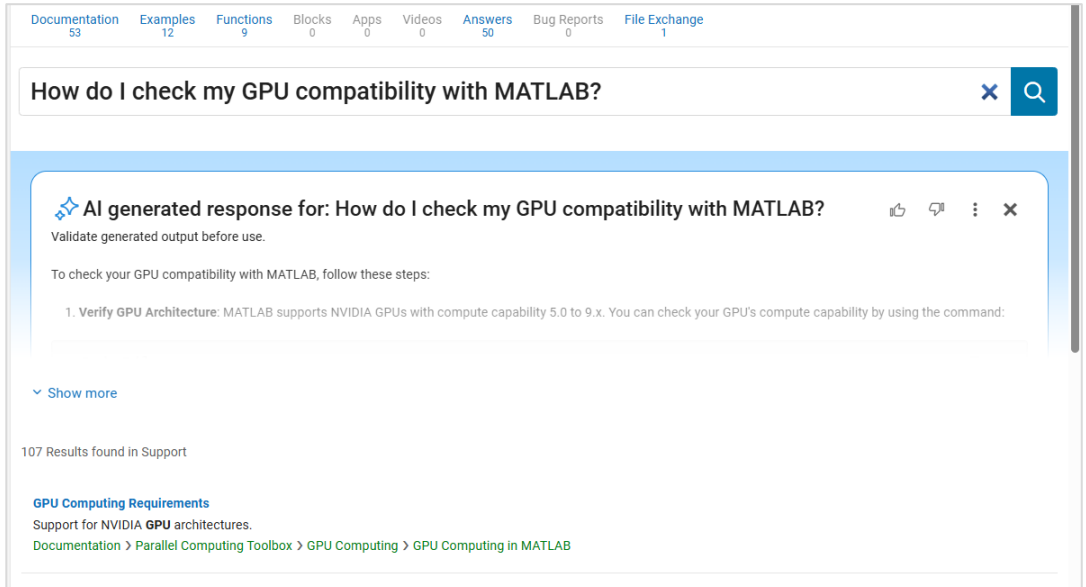
AI system that plan, reason & use tools autonomously

“Do it for me”

AI Chat Playground







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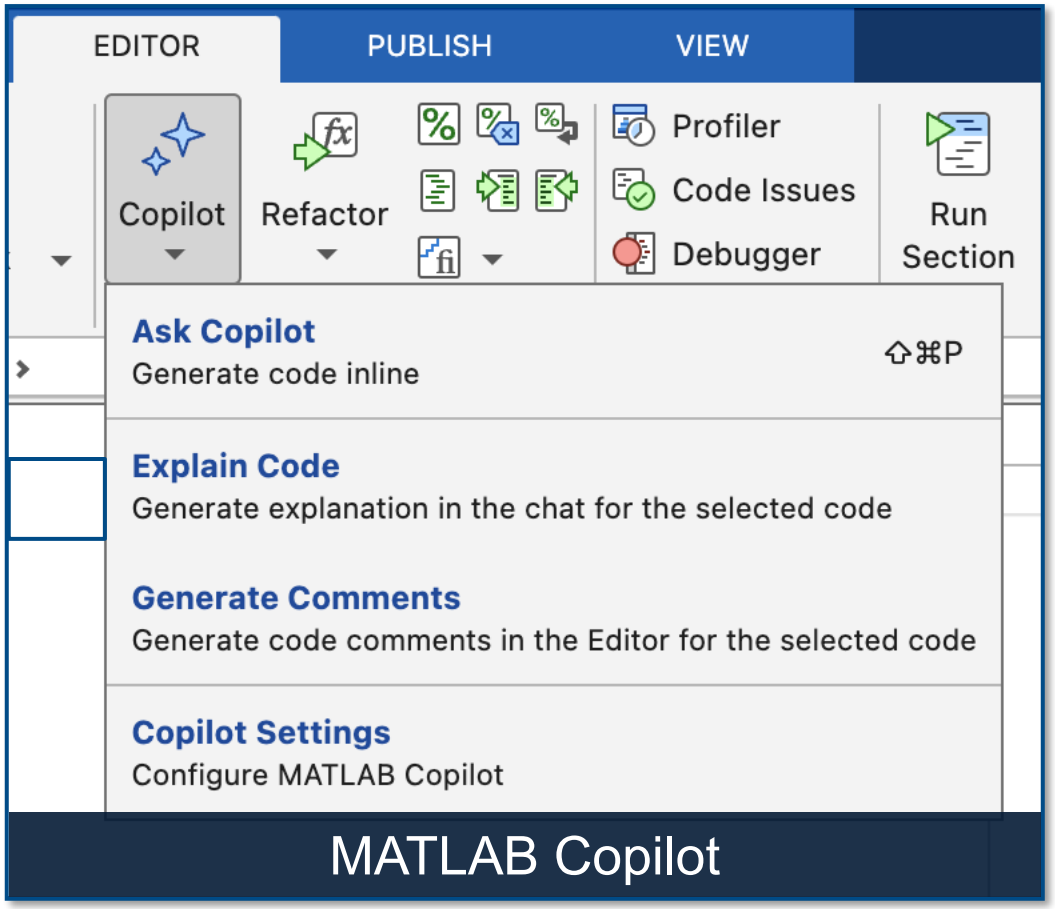
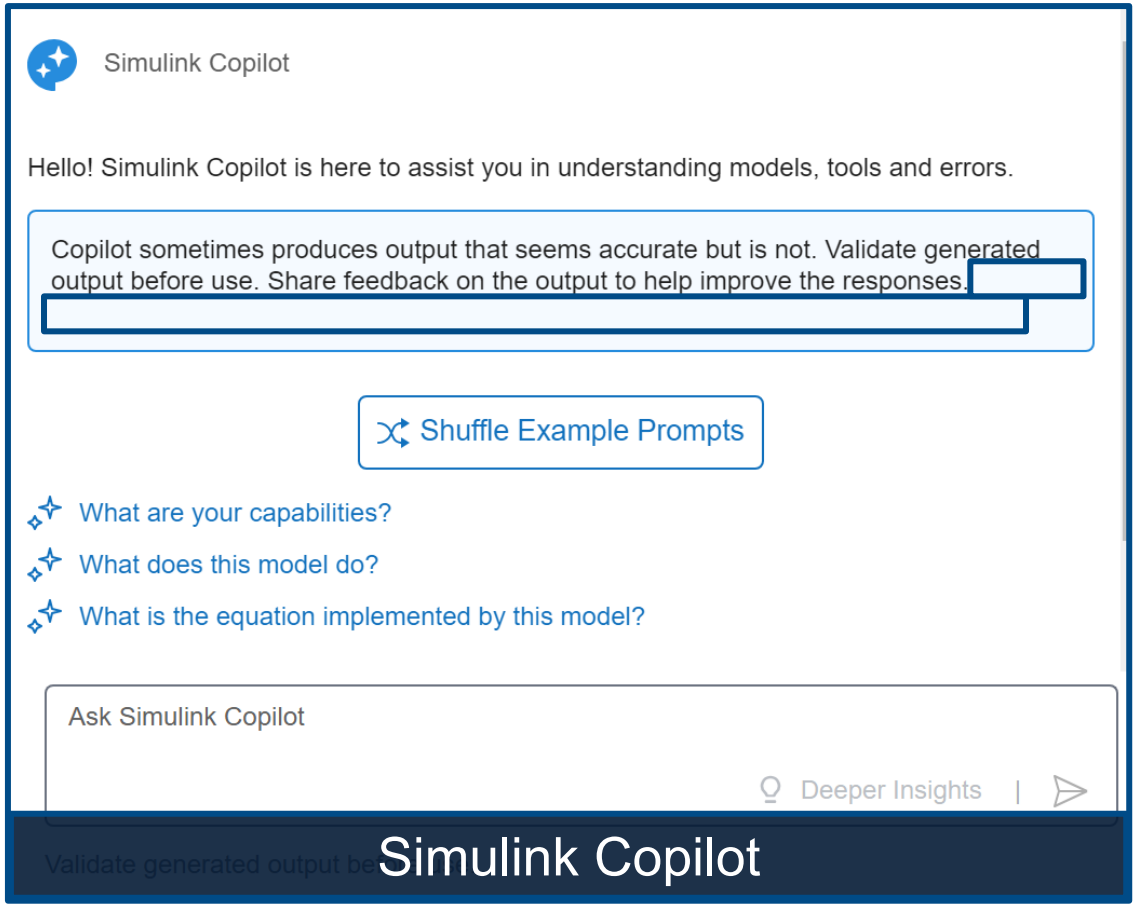
Use GenAI optimized for MATLAB and Simulink

Generative AI and Tools



MATLAB Copilot

R2025a

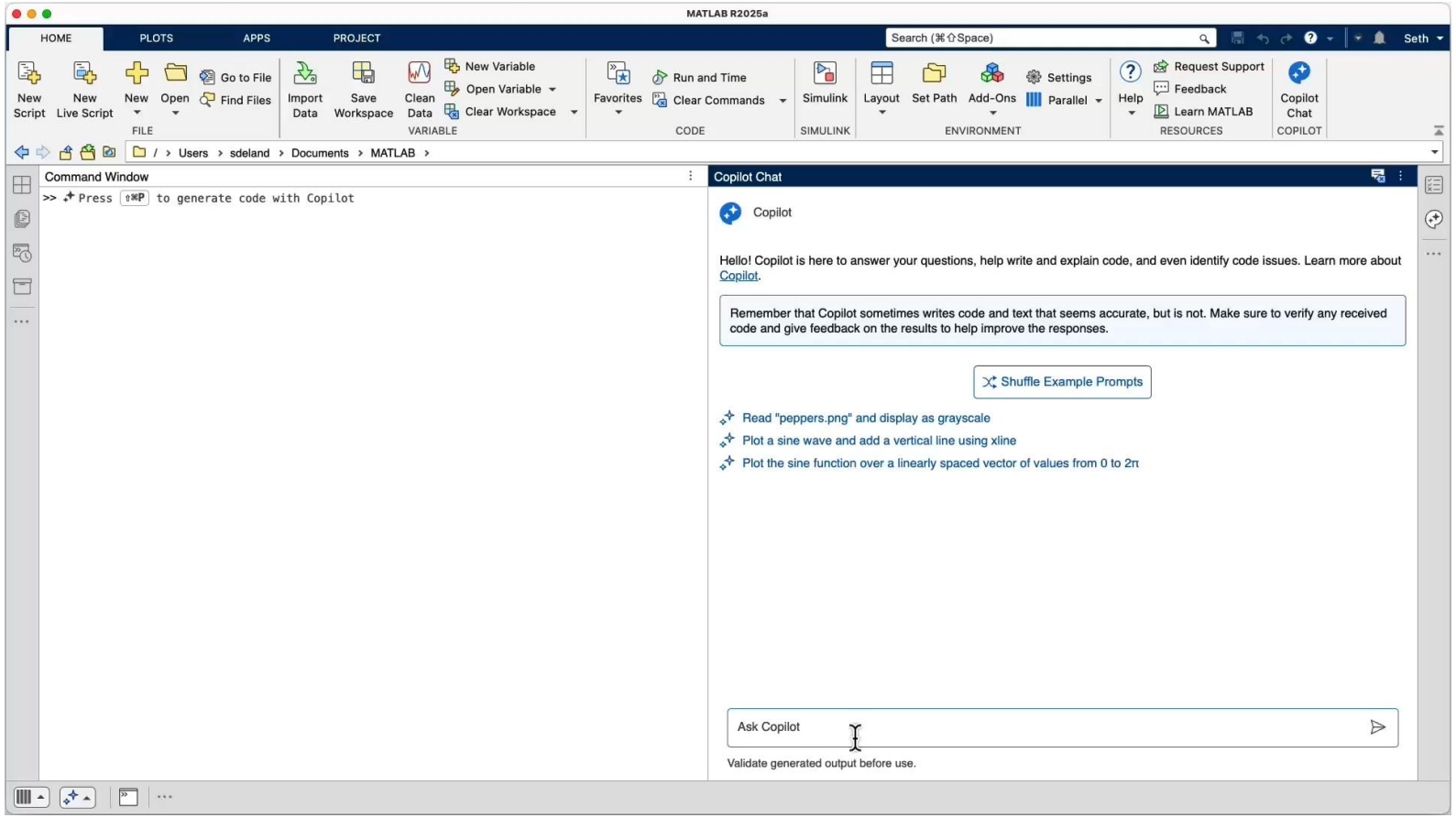


Simulink Copilot

R2026a

MATLAB Copilot

- Integrates GenAI models with your everyday workflows in MATLAB
  - **Copilot Chat**
  - **Copilot in the Editor** - Autocompletions, Generating Code
  - **Copilot Actions** - Explain Error, Explain Code, Generate Comments, Generate Tests



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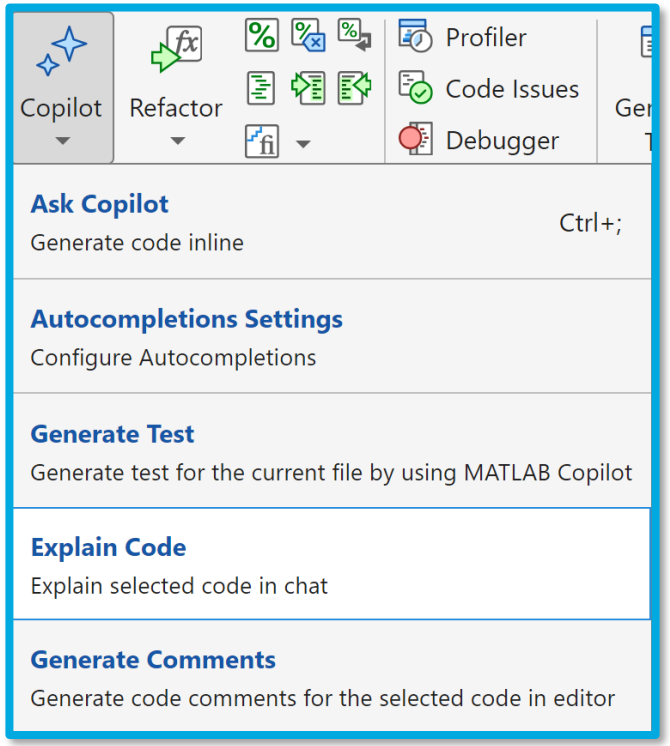
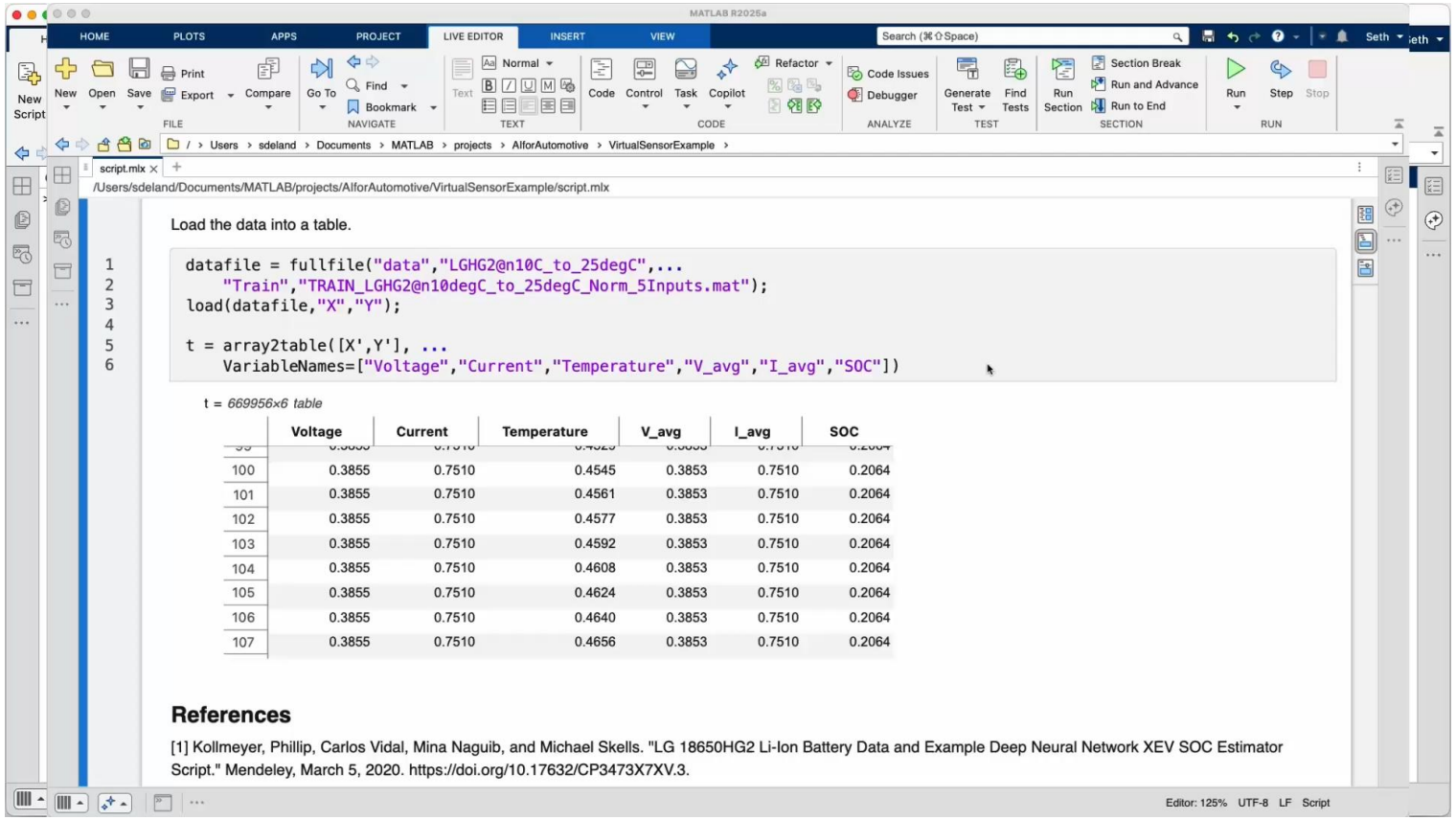
Generative AI and Tools





Simulink Copilot

Generative AI and Tools

- Provides deep insights and actionable advice

Explain & Advise

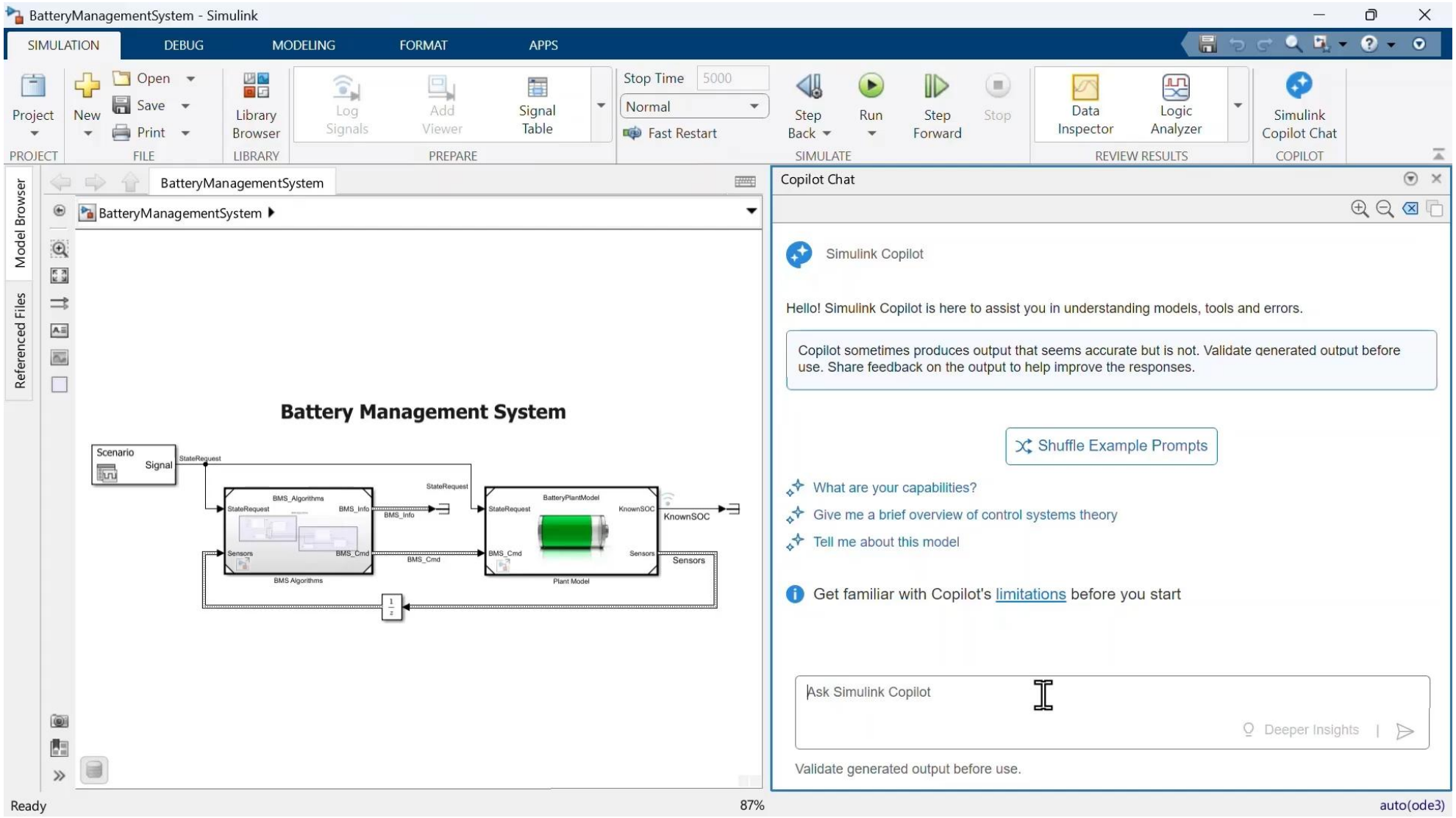
- Learn tools & techniques
- Understand the model
- Search the model
- Get advice
- Troubleshoot errors

Review & Automate

- Automate tasks
- Track progress

Simulink Copilot

Generative AI and Tools



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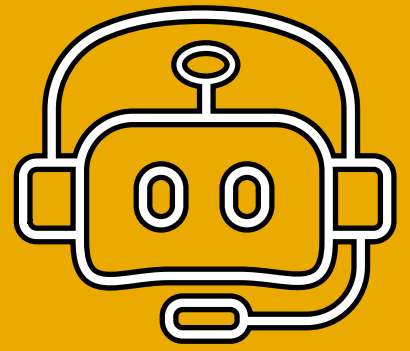


AI Agents and Agentic AI

AI system that plan, reason & use tools autonomously

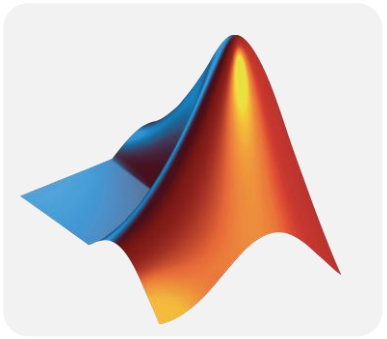
“Do it for me”

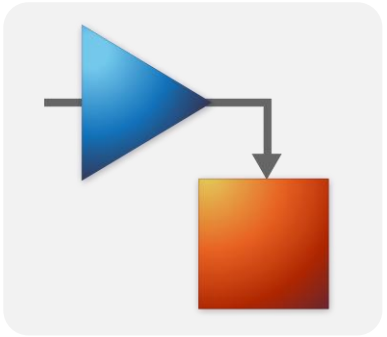
MATLAB MCP Core Server (MATLAB as a tool)

MATLAB MCP Core Server

MCP Client

MCP Server



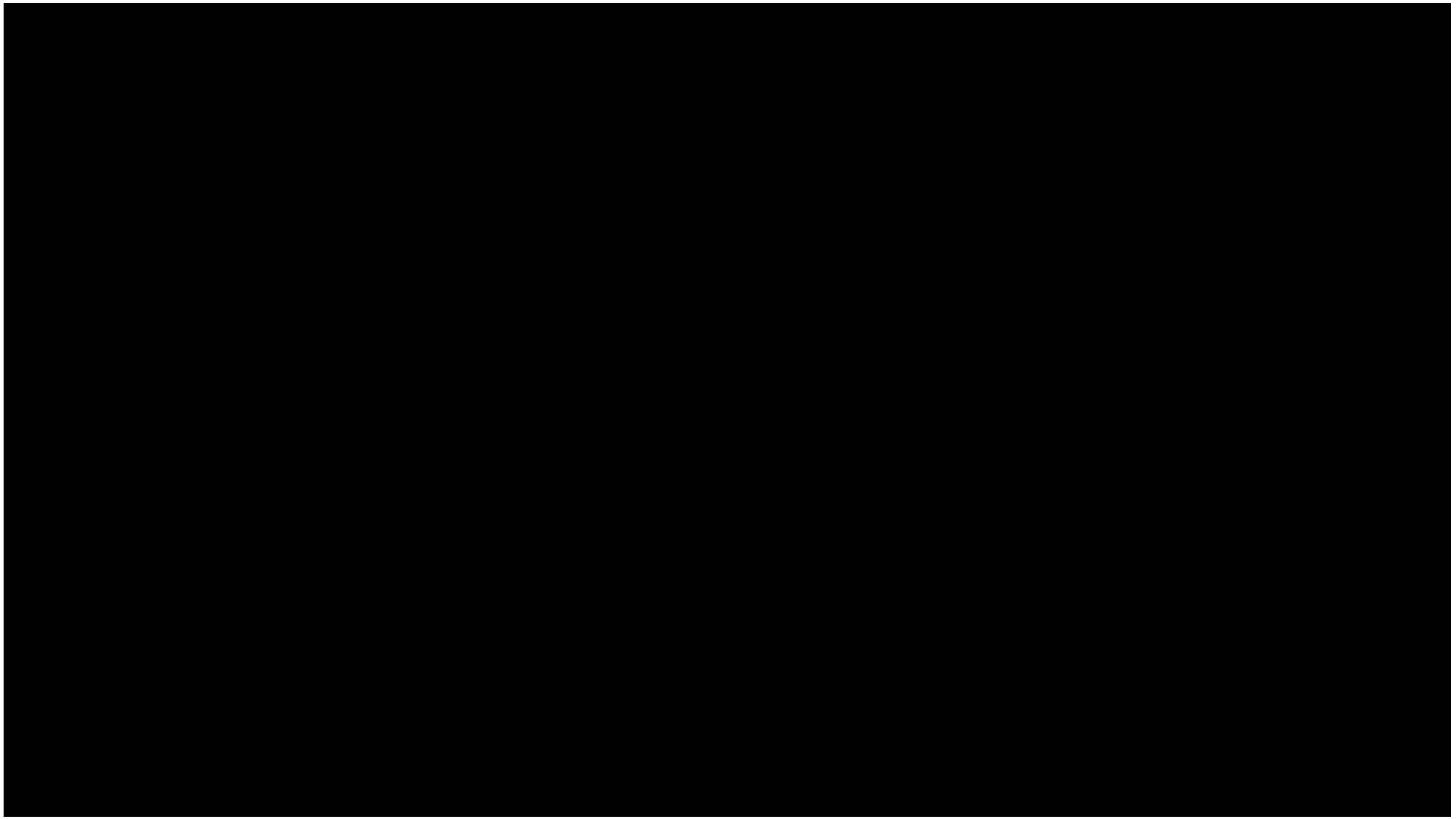


AI Chat and Agent Applications

Tools

https://github.com/matlab/matlab-mcp-core-server

MATLAB MCP Core Server (MATLAB as a tool)



MATLAB MCP Core Server (MATLAB as a tool)

MATLAB and Simulink Agentic Toolkits

Connect trusted MATLAB capabilities to AI agents:

- make engineering and scientific workflows agent-ready
- give AI agents both the ability to act (via tools) and the knowledge to act well (via skills)
- tools for reading, editing, querying, testing, and checking MATLAB & Simulink models

MATLAB Agentic Toolkit

Engineering and scientific workflows

Makes MATLAB capabilities available to AI agents, so agents can run code, test, debug, and build apps using MATLAB, not just generate text about it.

EXAMPLE SKILLS

Testing | Debugging | Code review | Building apps

Simulink Agentic Toolkit

Model-Based Design workflows

Gives AI agents the ability to read, build, edit, and test Simulink models, using Model-Based Design best practices encoded as skills.

EXAMPLE SKILLS

Building models | Testing models | Requirements | Bug reports

Work with: **Claude Code**, **GitHub Copilot**, **Cursor**, **OpenAI Codex**, **Gemini CLI**

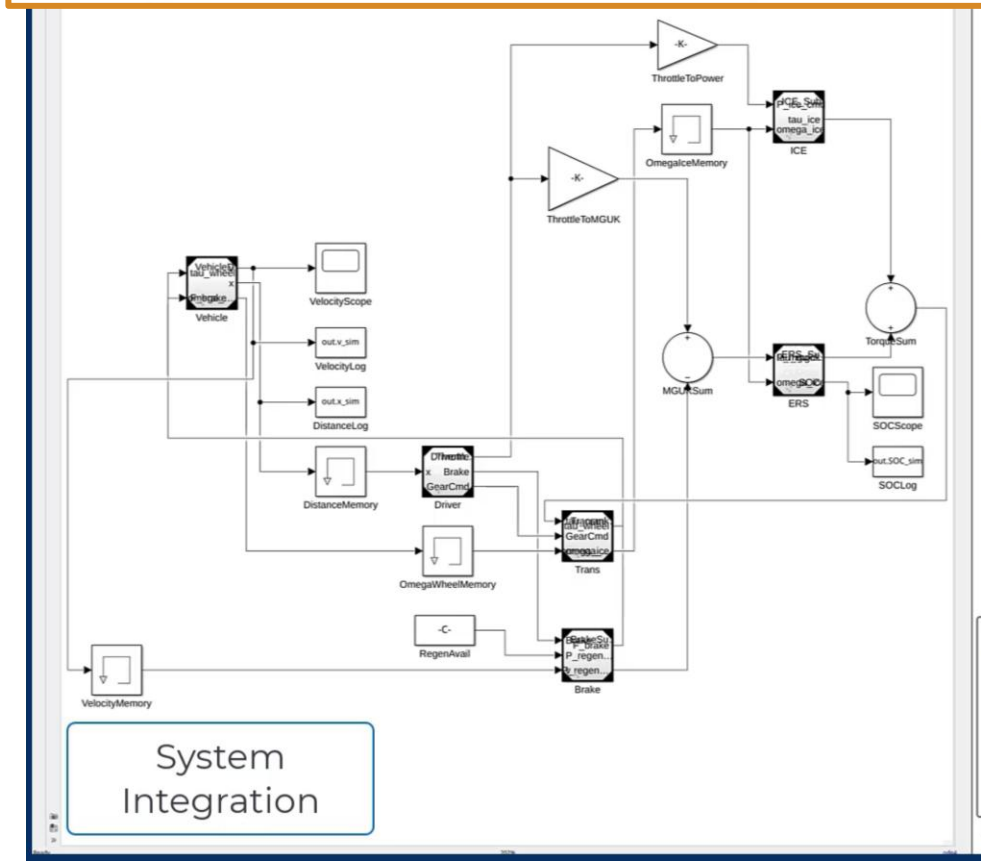
https://github.com/matlab/matlab-agentic-toolkit

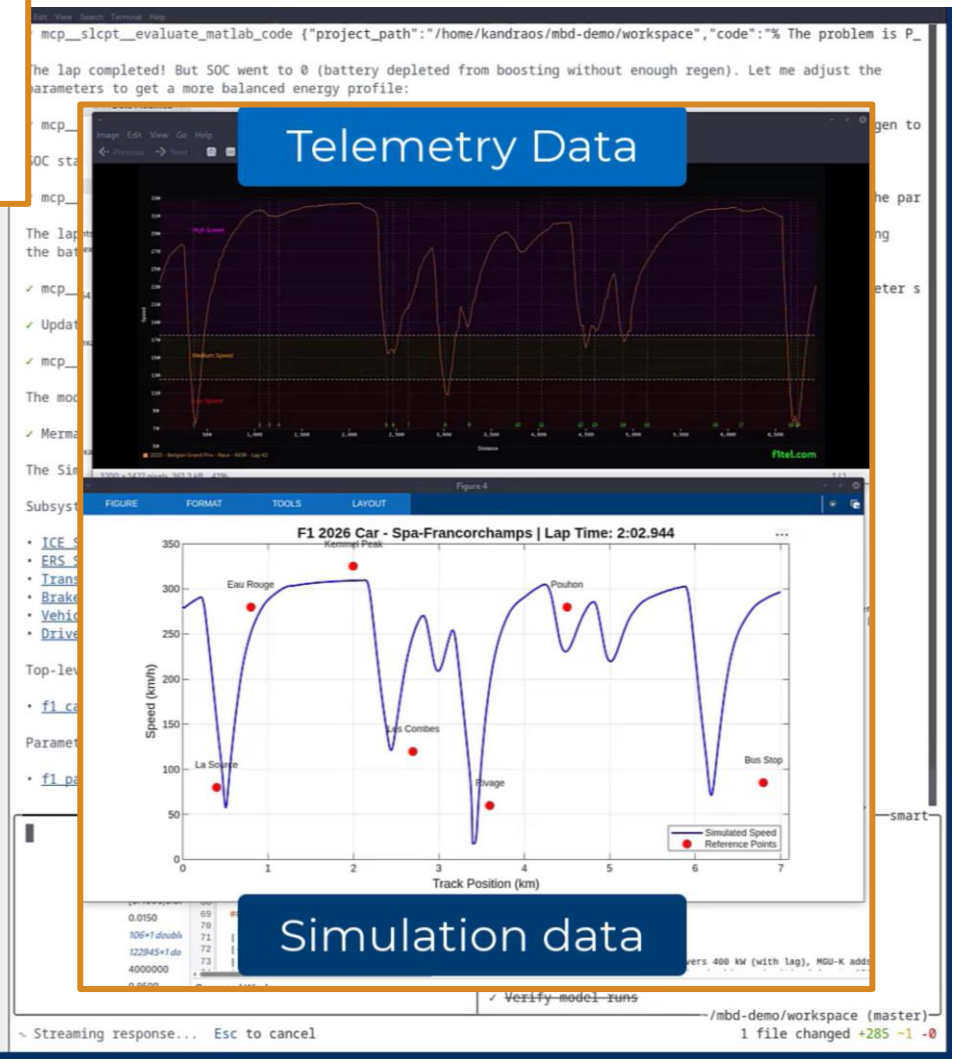
Agentic Engineering – F1 car in 40 minutes

- Generate architecture models
- Analyze, draft, and link requirements
- Generate & analyze Stateflow charts
- Generate & tune params of Simscape models

```
Subsystem Models:

• ICE_Subsystem.slx - 400 kW ICE with 0.3s turbo lag, torque rate limiting
• ERS_Subsystem.slx - 350 kW MGU-K with 4 MJ battery, efficiency model
• Transmission.slx - 8-speed gearbox with final drive
• BrakeSubsystem.slx - Regen prioritization with low-speed cutoff
• VehicleDynamics.slx - Longitudinal dynamics with drag/rolling resistance
• DriverInputs.slx - Distance-based lookup from spa_profile.mat
```

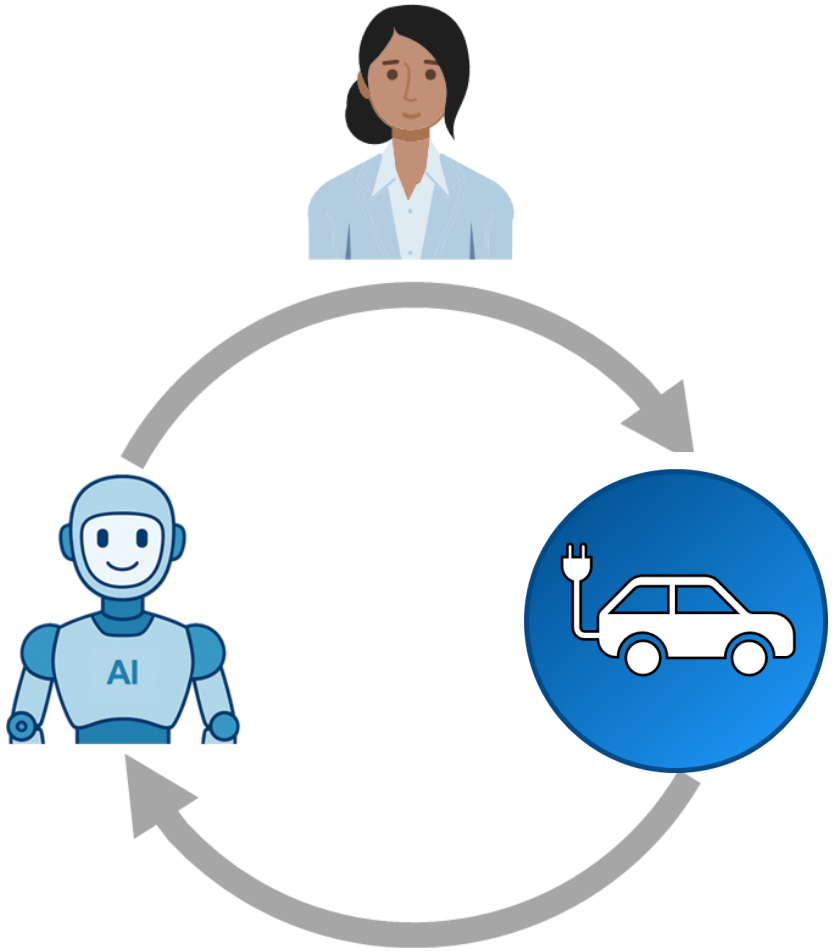




How Generative AI is reshaping engineering and engineers

- **Complement** and **Elevate** the role of the engineer
  - Engineering prototyping can be **accelerated greatly**
  - **Trusted results** by using GenAI and Agentic AI in a trusted tool like MATLAB
  - '**Skills'** and **Agentic Toolkits** instruct the AI agents to use our tools efficiently (Better accuracy and token use efficiency)

- **To consider:**
  - AI agents can generate and execute code with direct access to local files. Protect sensitive data from agents and use trusted components
  - Review your results before publishing Workflows, regulations, IP and data security is still unclear



Thank you!