

Artificial Intelligence in Roll Pass Design

A New Era of Efficiency and Innovation

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UTAH

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PASS DESIGNER

AI Won't Steal Your Job—But Masters AI Might



By [Antonio Garrido](#), Forbes Council
for [Forbes Coaches Council](#)

SEP 27, 2023 10:00 AM MDT

Amazon warn

Learn AI now or risk losing your job, experts

Employees across many sectors urged to take artificial intelligence seriously

[Angela Hennessy](#) · CBC News · Posted: Sep 27, 2023 10:00 AM MDT | Last Updated: September 27, 2023

Meta CEO: You won't lose your job to AI—you'll 'lose your job' if you don't use AI

Published Wed, May 28 2025 12:41 PM EDT

Someone Who

tech leaders about AI disruption

June 19, 2025 02:00 PM
by [Faruk Imamovic](#)

The 'Godfather of AI' says this sector will be safe from being replaced by tech—but even then, only the 'very skilled' will hold down a job

[Emma Burleigh](#)
Tue, June 17, 2025 at 10:16 AM MDT
4 min read

body



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Lets Dive IN

Agenda

- AI basics
- AI derivatives and differentiation
- LLM AI Tools
- Prompt writing
- Live Pass Design Demonstration
- Future trends
- Conclusion



WHAT IS AI?

Artificial intelligence is a wide-ranging branch of computer science concerned with building smart machines capable of performing tasks that typically require human intelligence



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IS ARTIFICIAL INTELLIGENCE
SAME AS AUTOMATION?

AUTOMATION



What is Automation?

Automation

Workflows that run automatically



- Good for replacing repetitive or mundane tasks
- Relies on a predetermined set of rules: when this happens, then do this

VS

AI

Machines that can “think”



- Able to analyze massive datasets, learn from that data, and then make decisions based on it
- Quality of output is dependent on effective human prompting and accurate data

AI IS VAST

GENERATIONS OF AI

PREDICTIVE AI

GENERATIVE AI

AGENTIC AI





LARGE LANGUAGE MODULES



What is prompt?

A **prompt** is the **input or instruction** given to an AI system to generate a response.

- Exercise 1
- Exercise 2



CLEAR INPUT
CLEAR OUTPUT



VAGUE INPUT
VAGUE OUTPUT



How AI is Changing Roll Pass Design?

- Explain Design formulas, process parameters, rolling theory
- Create checklist to Identify the flaws in rolling
- Design roll passes through prompts

Explain Design formulas, process parameters, rolling theory

—

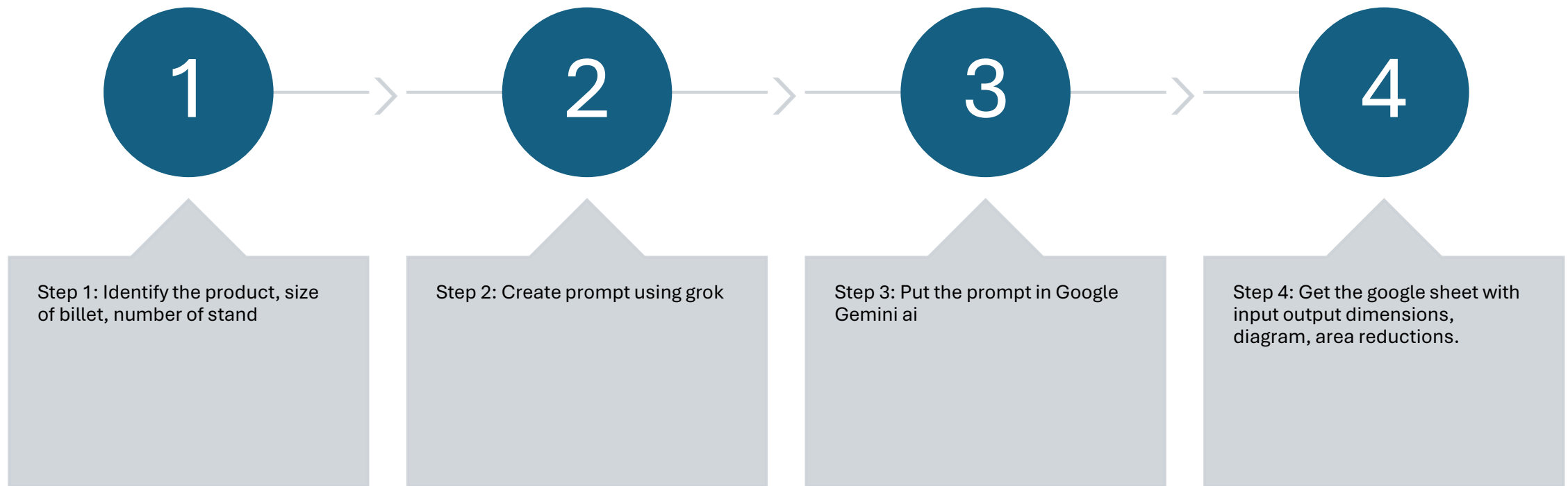
Demonstration: What is Pitch line and how to calculate it?

Create checklist to Identify the flaws in rolling

Problem: Uneven elongation between passes

[illegible]

Design roll passes through prompts



Create rectangle in autocad using AI

-
- Prompt: Create a four sided polygon using LISP where the user is prompted to provide the first three points and the fourth side is on the side of the first point so that the final shape makes a parallelogram.
 - Step 1: Put the prompt in any AI tool
 - Step 2: Save the code on desktop through a text document
 - Step 3: Rename the file to C folder name and save as lsp
 - Step 4: Load the file to Autocad
 - Step 5: Generate the command as per file.
 - Step 6: Drawing is ready

Future Trends

- **Integration of Theoretical LLM Pass Design with Advanced CAD Tools**

Leveraging AI models to automatically generate optimized pass sequences in AutoCAD.

- **AI-Assisted Pass Design Flow Sheets**

Using prompts and intelligent automation to create detailed, error-free flow sheets efficiently.

- **Accelerated Innovation in the Steel Industry**

Harnessing AI for smarter design, reduced trial-and-error, and faster process improvements.



Conclusion

- **Foundational Knowledge Matters:**

Understanding the basics of roll pass design is still essential to fully leverage AI tools.

- **AI as a Learning and Enhancement Tool:**

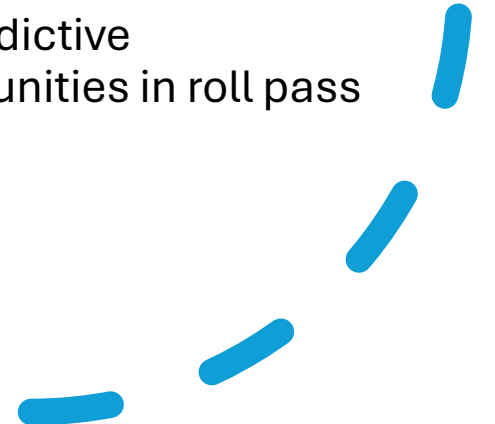
AI is here to assist, not replace. It can accelerate your learning and help you perform your job more efficiently.

- **Process Improvement:**

AI can optimize processes, reduce trial-and-error, and enable smarter decision-making.

- **Future Potential:**

As AI evolves, it could provide deeper insights, predictive capabilities, and continuous improvement opportunities in roll pass design.



ANY
QUESTIONS?



Thank
you!



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