PROJECT PERFORMANCE INTERNATIONAL

AI for Systems Engineering 1-Day Workshop

Applying AI within disciplined systems engineering practice

8-Hour Workshop delivered over one day *or* two half-days

Why AI for Systems Engineering?

AI tools are increasingly accessible to engineers, but **accessibility does not equal effective use**. Many teams experiment with AI in isolation, producing outputs that are difficult to trust, hard to integrate, or misaligned with established engineering processes. This often results in confusion, inconsistent artifacts, and uncertainty about responsibility for decisions informed by AI.

Engineers need more than exposure to AI capabilities. Engineers need to understand how **AI fits within disciplined systems engineering work**, how to recognize unreliable outputs, and how to apply AI without compromising requirements quality, architectural integrity, or derived subsystem requirements.

This workshop addresses the practical challenge of applying AI in engineering work with clarity, discipline, and control.

Professional Development

Credits may be claimed for professional development (CPD) purposes:

- the PMI family of accreditations
- 8 CPD hours with Engineers Australia and Engineering New Zealand

What You Will Learn

AI for Systems Engineering (AI4SE) is a practical, intensive, eight-hour workshop delivered over one or two days, focused on applying AI within established systems engineering principles and practice.

The workshop develops skills in:

- **framing engineering problems for AI responses**
- **guiding AI interaction**
- **interpreting outputs so they can be used appropriately within engineering artifacts and workflows.**

Participants experience in depth how AI can support activities such as validating and authoring requirements, creating and evaluating alternative solution architectures, and deriving subsystem requirements, while recognizing and accommodating limitations and risks associated with the use of AI. Additional candidate applications of AI within SE are summarized.

The emphasis of the workshop is on disciplined application of AI that strengthens, rather than replaces, engineering knowledge and judgment. A roadmap for transformation of the use of AI by the individual engineer, to at-scale integration of AI into corporate engineering workflows, is discussed.

20,000 Professionals Trained Across 43 Countries

Who Should Attend and Why

This workshop is for engineers and technical professionals involved in systems engineering activities, including requirements, architecture, detailed design, traceability, verification, integration, and engineering management. It is suited to practitioners who want to use AI as a support mechanism within their engineering work, rather than as a substitute for engineering thinking.

No prior experience with AI is assumed. The workshop is appropriate to those new to AI, and to those already on an AI journey, providing structure, discipline, and confidence in its appropriate use.

Training Methods & Materials

The workshop combines short presentations, facilitated discussion, and extensive hands-on exercises. Approximately half of the workshop time is spent in applying AI to structured engineering tasks using realistic scenarios and data sets provided as part of the workshop material.

Participants use their own preferred large language model (bring your own LLM!), allowing learning to transfer directly back into their working environment. No software training is required. All materials are provided digitally and include exercises, examples, and reference content that can be reused after the workshop.

Delivery of the workshop may be:

- **in-person or online**
- **in open-registration**
- **corporate delivery modes.**

Why PPI?

Trusted Worldwide
PPI delivers outstanding training and consulting to many hundreds of enterprises worldwide, from Fortune 100 companies (presently 19% of them) to small start-ups. PPI is a truly international company, with personnel based in eight countries, and clients across six continents benefiting from our work.

PPI Presenters
PPI's presenters are internationally recognized systems engineering practitioners and consultants who bring decades of real-world experience, ensuring every concept taught is value-adding, practical, relevant and immediately implementable.

AI For Systems Engineering (1 Day or 2 Half-Days)

1. Workshop Orientation (0.5 hours)

- Purpose and scope
- Definitions of key terms – AI, LLM, prompt, hallucination
- Connection to existing systems engineering practice
- Path to enterprise-scalable AI4SE

2. AI and LLM Fundamentals for SE (0.5 hours)

- What LLMs do, and do not do
- LLM glossary
- How LLMs work
- Trade-offs in the use of LLMs
- LLM limitations
- AI capability stack

3. Prompt Engineering (1.5 hours)

- A prompt engineering process model
- The anatomy of an effective prompt
- A comprehensive illustrated prompting strategy
- Creativity and reproducibility in LLMs
- Quality attributes of LLM outputs
- Observed LLM defects
- Hallucination prevention methods
- Integration of AI outputs into engineering artifacts
- Organizational management of LLMs

4. Applied Practice – Building SE Artifacts (4.5 hours)

- Introduction to the workshop system
- ***Exercise 1 – System requirements quality (in depth)***
- ***Exercise 2 – System architectural design (in depth)***
- ***Exercise 3 – Requirements allocation; subsystem requirements derivation (in depth)***

5. Enterprise Risks, Governance, and Adoption Roadmap (0.9 hours)

- Proceed with caution!
- A roadmap towards safe, enterprise-scalable AI-enabled engineering
- Example AI Use Policy
- AI governance
- Development and governance process model
- LLM security boundaries
- Retrieval Augmented Generation (RAG) implementation architectures
- Apply engineering thinking and tools in the application of AI to SE
- References and further reading

6. In Closing (0.1 hour)

Note: *The timing of workshop modules is indicative and is subject to some variation between deliveries.*

www.ppi-int.com

systems/product engineering training & consulting for project success ...

PPI-008900-1