RMIT STEM Capability for Applied AI

Towards Decision-Ready Industrial AI

Digital Transformation • AI • Cyber

Who We Are

A/PROF WEI PENG
Principal Research Fellow, Industrial AI
School of Engineering, RMIT

RESEARCH FOCUS
- Reliable and safe LLMs and agents
- Contextual memory and physical grounding
- Industrial decision support systems

RESEARCH OUTCOME
- MONITOR (NAACL), SADI (ICLR)
- Procedural memory (AAMAS)
- Memory grounding (ICML)

RMIT STEM CAPABILITY
Applied AI and optimisation
Digitalisation and advanced manufacturing
Sensors, health and human–AI systems

RMIT AI at a Glance 2025
- **$12m** annual research funding
- **135** industrial and government partnerships

20 years across academic and industrial AI
80+ peer-reviewed papers • multiple AI patents

RMIT STEM Capability in Action

PHYSICAL → DIGITAL → AI → INDUSTRIAL DECISION SUPPORT AT SCALE

5 INDUSTRY OUTCOMES Manufacturing • Net-zero operations • Health
SAFER • PRODUCTIVE • LOW-CARBON • RESILIENT

4 DECISION-READY AI Grounded • Constraint-aware • Coordinated • Traceable
CAPABILITY: Rahil Garnavi • Karin Verspoor • Wei Peng **PLATFORM:** RAIsE • CHAI

3 RELIABLE AND AGENTIC AI LLMs/VLMs • Hallucination • Safety • Agentic
CAPABILITY: Xiaodong Li • Wei Peng **PLATFORM:** RAIsE • RAIL

2 RMIT STEM ENABLERS
Sensing and multimodal data • AI/CV/NLP and optimisation • advanced manufacturing
CAPABILITY: Milan Brandt • Madhu Bhaskaran • Ruwan Tennakoon **PLATFORM:** RAIL • AMP • D2D

1 PHYSICAL AND DIGITAL INDUSTRIAL CONTEXT
Assets and sensors • processes • people and authority • safety, resource constraints
CAPABILITY: Ben Cheng • Matthew Warren **PLATFORM:** Digitalisation Network • CCSRI

Capability to Impact

CAPABILITY → PILOTS → SCALE

NEXT STEPS
- Join forces with Derby to address shared industry challenges
- Co-design 2–3 industry research pilots
- Form joint cross-disciplinary research and PhD teams
- Develop collaborative funding bids with industry partners

FUTURE AMBITION
A Derby–RMIT cross-border testbed for trustworthy, decision-ready industrial AI

COLLABORATION ROUTES
Pilots • Shared PhDs • Industry partners
UKRI • Horizon Europe • Innovate UK • Australian schemes

Partner Ecosystem
AWS, Boeing, Bosch, Google, Telstra Health, etc.

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