

AI Engineer

Position Description

Safety and Regulatory Insights
National | Specialist 1

	<p>About ONRSR</p> <p>The Office of the National Rail Safety Regulator (ONRSR) plays an integral role in keeping Australians safe across the nation’s vast and varied rail networks. Headquartered in Adelaide, and with offices around the country, ONRSR is an independent regulatory authority that encourages safe rail operations, enforces national compliance with the <i>Rail Safety National Law</i>, and promotes and improves rail safety throughout Australia.</p> <p>Our People and Our Culture</p> <p>At ONRSR we aim to enhance and promote rail safety nationally through effective risk-based regulation. To achieve that, we need people with the vision to contribute to the safety of Australia’s railways – people who are professional and motivated by the opportunity to improve rail safety and by the benefits this delivers to the Australian community.</p> <p>Our culture reflects our values of Integrity, Respect, Independence, Diligence and Excellence in the way we work, lead and engage with others. Our culture blueprint guides us to create a respectful, inclusive and equitable workplace – where diversity is embraced, and every individual can contribute, grow, and thrive. Every role plays a part in shaping this culture.</p> <p>Our purpose Safe railways for Australia</p>
	<p>The Role – Your impact and contribution</p> <p>As an AI Engineer your role is to drive AgentOps and LLMOps practices to deliver the necessary infrastructure, pipelines, and governance frameworks to manage LLM based Agentic and RAG tools. Besides delivering pipeline and model-serving solutions, the role is expected to play a formative role in building the AI acceptance and capability across the whole organisation.</p>
	<p>Key Relationships</p> <p>Reports to: Senior Manager Data Management and Platform</p> <p>Internal: ONRSR BTS, Advanced Analytics and Insights team and business units</p> <p>External: ONRSR technology vendors and suppliers</p>



Your Responsibilities

As a skilled and practical AI Engineer, you will focus on delivering measured and appropriate solutions which engender trust and reliability. The role will be responsible for:

Infrastructure and Pipeline Development


- In consultation with ONRSR BTS Architecture function, design and communicate ONRSR's Reference Architecture for Generative and Agentic infrastructure.
- In consultation with the Data Engineer, ensure that data preparation (preprocessing, chunking and embedding) is aligned to system needs.
- In consultation with Data Engineering ensure that data pipeline conforms to data protection and data governance guidelines.
- Build, modify and maintain pipeline infrastructure in accordance with the agreed reference architecture and appropriate change controls.
- In consultation with the Business Analyst, engage with business users and analysts to refine AI tools for business use.
- Monitor consumption, usage and service levels to ensure appropriate use and system performance.


Evaluation and Assurance (RAGAS Framework)

- In consultation with the Data Engineer and Data Analysts, prepare ONRSR's 'Golden Dataset' query and response data set and ensure that it continually reflect business and assurance/compliance needs.
- In consultation with the business, develop RAGAS metrics which balance the organisation's need for trust with practical constraints to development.
- Evaluate Context Relevance (retrieval precision) of RAG models in consultation with business users and develop test models to identify distractor chunks.
- Utilise automated testing tools to evaluate citation precision and monitor Abstention rate.
- Prudently utilise LLM-as-a-Judge and compare and explain differences in results.
- Use Natural Language Inference (NLI) testing to evaluate Groundedness and provide clear business awareness of the scope and nature of false claims (hallucinations).
- Compare Semantic Relevance to Golden Dataset and as well as conduct additional Sentence Level and Reverse question testing.
- Refine and rebuild RAG models based on testing metrics including the measured and prudent use of Reinforcement Learning from Human Feedback (RLHF).
- Periodically report on RAG performance including key RAGAS metrics as well as associated DevOps and availability/scale metrics.

Governance and Security (Close Co-ordination with BTS)

- Engage and support the BTS Governance team on ensuring model Safety, Privacy and Security and respond to changes as required.
- In consultation with ONRSR BTS Governance, ensure that the AI Reference Architecture is documented and changes managed through the ONRSR Design Authority.
- Comply with ONRSR Data Governance and IT Change requirements, including appropriate change requests and controls.

	<ul style="list-style-type: none"> • Engage BTS and ONRSR Risk Management on the appropriate Human-in-the-Middle control points and monitor Human Override Rate. • Collaborate with ONRSR BTS in the development of appropriate IdP frameworks to ensure that Agentic models operate securely, report Agent behaviour and develop controls. • In consultation with BTS, develop 'Golden Tool Call' dataset for all Agents in approved scope and ensure that this dataset is maintained in accordance with business and Cyber Security needs. • Monitor Agent Success, task handover, Abstention and utilisation rates and cull unnecessary/underperforming agents.
	<p>What you Bring – Key Competencies</p> <ul style="list-style-type: none"> • Excellent analytical and problem-solving capabilities with a keen eye for detail. You should have proven ability to analyse complex information and translate it into clear, concise requirements. • Exceptional communication, interpersonal, and facilitation skills. You will need to be skilled at building rapport with stakeholders and communicating technical concepts to non-technical audiences. • Disciplined 'Engineering' background with a key focus on ensuring that processes are appropriate for the scale and nature of an organisation. • Familiar with Agile methodology, with previous experience leading teams in Agile processes. • Experience in developing Reference Architectures and associated processes to ensure their relevance. • Strong technical documentation skills, with experience in highly governed environments. • Significant experience in non-deterministic testing coupled with the ability to transpose results into constraints which are practically understood by the business. <p>Helpful qualifications and experience</p> <ul style="list-style-type: none"> • 3+ years of experience designing, building, and operating scalable AI pipelines across data collection, evaluation, deployment, and monitoring. • 2+ years of commercial experience working on NLP, large language models, or document understanding/analysis applications. • Strong understanding of LLM/Pretrained Transformer fundamentals, model evaluation, data preprocessing, and robust software engineering practices. • Experience developing high trust retrieval-based systems and agentic tools. • Experience with cloud platforms (preferably Azure) and associated AI/ML services. • A demonstrated ability and enthusiasm for mentoring and guiding engineers, fostering growth and technical excellence across the business. • Demonstrated active use of modern AI tools in the development process is expected. • Experienced with Python or Rust.

	<p>Your compliance</p> <p>As a regulator, it is important that we are all on the same page when it comes to safety and risk management and everyone at ONRSR is responsible to actively supporting this aspect of our role to promote a positive and safe culture. ONRSR has a zero tolerance to the use of alcohol and non-prescription drugs for all workers while undertaking ONRSR work. This includes workers recalled to duty unexpectedly who should decline to work if doing so puts them in breach of the Drug and Alcohol Policy.</p> <p>Other items of note</p> <p>On occasions, this role will require you to work outside of normal business hours, on weekends and public holidays. There is a requirement to travel which may include short stays in ONRSR interstate offices.</p> <p>Privacy Notification</p> <p>ONRSR requires personal information and documents relevant to your employment. The collection and handling of this information will be consistent with the requirements of relevant privacy laws.</p>
	<p>Our Commitment to you and your Commitment to ONRSR</p> <p>ONRSR is genuinely committed to investing in the capability of its staff. Opportunities to learn and enhance skills are made available through the delivery of our internal training programs which comprise of a mixture of internal and external offerings.</p> <p>ONRSR expects its people to contribute to the efficient and effective functioning of the organisation to meet ONRSR and team strategic goals. This includes actively participating in the Performance Development and Review process; demonstrating appropriate and professional behaviours in accordance with the Code of Conduct and values; providing assistance to team members if required; and undertaking other key responsibilities or activities as directed.</p> <p>I have read and understood the requirements of the position and agree to carry out the key responsibilities to the best of my ability.</p> <p>I understand that I may be required to perform other duties from time to time to fulfill the position requirements.</p>