



AustLII Foundation Limited

Backend & Systems Developer/Engineer

POSITION DESCRIPTION

1. POSITION SUMMARY

AustLII is the largest free-access provider of online Australian legal materials and is one of the largest providers of worldwide free-access legal content. AustLII provides access to over 1000 databases of Australasian legal materials, hosts more than four million searchable documents and receives over 1,000,000 hits daily from diverse user groups. AustLII's core mission is to improve access to justice through better access to public legal information, encompassing primary materials such as legislation, treaties, and court decisions, as well as secondary materials like law reform reports and law journals.

The **Systems & Backend Developer/Engineer** is a newly established position, responsible for designing, developing and maintaining the platform services, search technologies, retrieval systems, APIs and backend capabilities that underpin AustLII's legal information services.

The position applies advanced practical knowledge across backend application development, search and retrieval systems, AI integration, and backend platform services. The position combines strong technical judgement and specialist backend expertise with substantial hands-on software development and engineering.

The position has a focus on delivering production-quality backend engineering, including API and service development, system integration, search and retrieval services, performance optimisation, troubleshooting and service reliability.

Working collaboratively with other technical teams and specialists, the position ensures AustLII's platforms and systems remain resilient, secure, scalable and adaptable to emerging technology needs.

The Backend & Systems Developer/Engineer reports to the Software Engineering Manager and has no direct reports.

2. KEY ACCOUNTABILITIES

- Design, scale, and maintain core backend services and platform components to ensure system reliability, scalability and performance. Take ownership of code modernisation initiatives, systemic refactoring, and database optimisations to improve overall system maintainability and reduce and manage technical debt. Ensure all backend components directly support reliable internal and public legal information services.
- Build and support secure APIs and information retrieval systems to enable seamless data exchange across applications, search indexes, and internal legal tools. Optimise backend data flows and service integration to improve retrieval accuracy, system responsiveness and multi-platform integration. Collaborate with cross-functional teams to deliver stable, high-performance integration layers.

- Apply secure software development practices, write clean, maintainable and well-documented code; develop automated tests; participate in code reviews; contribute to engineering standards; and support system reliability, resilience and compliance objectives.
- Help to shape and implement the integration of AI, machine learning, semantic retrieval, vector search, embeddings, reranking technologies, knowledge graphs, LLM APIs, retrieval-augmented generation and related technologies.
- Independently clarify, analyse and translate requirements into functional outcomes, lead solution design and support reliable delivery of backend services and related digital capabilities, working effectively with a range of technical and non-technical stakeholders.
- Investigate and help resolve complex technical issues and work collaboratively with other team members to provide constructive technical input through effective collaboration, knowledge sharing, documentation and participation in code reviews in relation to application architecture, development standards and delivery practices.
- Strengthen and support a culture of collaboration and innovation across the organisation, embracing partnering practices that build trust, transparency and alignment across the technical functions.

In addition to the above, all AustLII team members are expected to undertake the following:

- Perform any other duties as required and appropriate to this position;
- Support colleagues and contribute flexibly across team activities as needed to achieve shared goals;
- Use resources responsibly to deliver efficient outcomes;
- Share knowledge, insights, and lessons learned with peers, ensuring information is well documented and accessible;
- Comply with relevant EEO and WHS regulations.

3. POSITION ATTRIBUTES

Decision-Making and Accountability: Works with substantial independence under broad direction and exercises sound judgement in defining technical approaches to complex or ill-defined backend, search, retrieval and platform engineering challenges. Recommendations may be reviewed for soundness of judgement but are usually regarded as technically accurate and feasible.

Impact and Influence: Makes technical decisions and consults, advises and makes recommendations that influence the performance, reliability, search effectiveness and long-term scalability of AustLII's legal information, search and AI-assisted legal research services.

Problem Solving and Complexity: Resolves complex technical issues involving backend services, APIs, databases, search and retrieval systems, AI-enabled platform capabilities, integration, deployment and security requirements. Problem solving may necessitate modification of established guides and devising new approaches. The position may make some original contribution or apply new professional approaches and techniques.

Communication and Collaboration: Contributes as a senior technical specialist by sharing expertise, supporting consistent engineering practices, reviewing work of others for technical accuracy and adequacy, collaborating effectively across technical teams, and communicating complex technical concepts clearly to technical and non-technical stakeholders.

4. QUALIFICATIONS AND EXPERIENCE

- A degree in Computer Science, Software Engineering, Information Technology or a related field with extensive subsequent experience in software engineering, backend development or platform engineering; or a postgraduate qualification with relevant specialist experience; or an equivalent combination of education, training and practical engineering experience.
- Demonstrated experience designing, building, maintaining, optimising and modernising production software systems, including experience with backend services, APIs, information retrieval, legal information, search or other data-intensive environments.

5. KNOWLEDGE AND SKILLS

- **Advanced Backend Development:** Expert-level proficiency in enterprise server-side programming languages, including Python or Perl, together with experience in C/C++, Java or comparable server-side technologies, and demonstrated experience with modern software architecture, APIs, distributed services and service-oriented design. Demonstrated ability to maintain, troubleshoot, refactor and progressively modernise complex software systems while protecting reliability, continuity of service and maintainability.
- **Database, Search and Platform Integration:** Demonstrated expertise with SQL and relational databases such as PostgreSQL, together with experience with search, indexing and information retrieval technologies such as OpenSearch, Elasticsearch, Vespa, Solr or similar platforms. Proven ability to design, implement and maintain APIs, search services, retrieval systems and platform components that support legal information services, user-facing applications and internal operational tools.
- **Engineering Quality, Security and Reliability:** Experience with Linux-based environments, containerisation, CI/CD practices and secure, reliable software practices. Demonstrated ability to write clean and maintainable code, develop automated tests, participate in peer code reviews, prepare technical documentation, and contribute to engineering standards, reliability and continuous improvement.
- **Emerging Technology Integration:** Practical experience or strong conceptual understanding of AI-enabled services, vector search or vector-enabled databases, semantic retrieval, embeddings, reranking technologies, LLM APIs, retrieval-augmented generation and related technologies, together with the ability to assess how these capabilities may be securely and appropriately integrated into backend systems.
- **Communication and Collaboration:** Excellent communication skills, with the ability to collaborate effectively across technical teams and communicate complex technical concepts to both technical and non-technical stakeholders.

6. APPROVAL

Approved by:	Managing Director, AustLII Foundation
Date:	September 2026