

ARTIFICIAL INTELLIGENCE ENGINEER

ALSO KNOWN AS: **MACHINE LEARNING ENGINEER** **AI DEVELOPER** **NEURAL NETWORK ENGINEER**

COGNITIVE COMPUTING ENGINEER

TAKE YOUR PLACE AT THE CUTTING EDGE OF TECHNOLOGY.

AI Engineers are the emerging architects of our intelligent future. They develop algorithms and systems that enable machines to perceive, learn, reason, and interact with the world around them.

KEY SKILLS

Skills which may benefit anyone considering a job as a artificial intelligence engineer include:

- ✔ Algorithm design
- ✔ Data analysis
- ✔ Deep learning
- ✔ Machine learning
- ✔ Programming

CAREER PROGRESSION

In this role, you may have the opportunity to progress to other positions. Career progression opportunities include:

- Chief Executive Officer
- Supply Chain Manager
- Chief Operating Officer
- Chief Engineering Officer

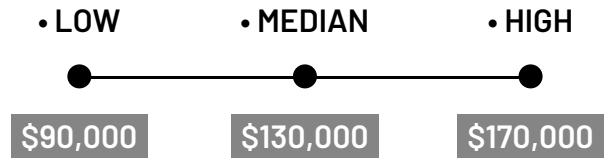
VALUES & ATTRIBUTES

Values and attributes of anyone considering a job as a artificial intelligence engineer include:

- ✔ Innovative
- ✔ Curious
- ✔ Ethical
- ✔ Persistence
- ✔ Adaptable
- ✔ Artistic – “Creator”

SALARY EXPECTATION

The expected salary for an Artificial Intelligence Engineer can vary across different areas of manufacturing and may vary as you become more experienced.



RELATED INDUSTRIES

- ▶ Aerospace and Defence
- ▶ Chemicals, Hydrocarbons and Refining
- ▶ Food and Beverage
- ▶ Furniture and Other Products
- ▶ General Manufacturing and Engineering
- ▶ Meat and Seafood Processing
- ▶ Pharmaceutical and Medical Technology
- ▶ Polymers, Plastic and Rubber
- ▶ Printing and Graphic arts
- ▶ Pulp, Paper and Packaging
- ▶ Renewables
- ▶ Textiles, Clothing and Footwear
- ▶ Timber and Wood
- ▶ Transport Equipment and Machinery

RECOMMENDED SCHOOL SUBJECTS

- Engineering Skills
- Mathematical Methods
- Physics
- Specialist Mathematics

CORE SCHOOL SUBJECTS

- General Mathematics
- Essential English
- Engineering
- Information and Communication Technology
- Digital Solutions

JOB OVERVIEW

Artificial Intelligence Engineers are at the forefront of technological innovation, working to create intelligent systems that can solve complex problems and enhance human capabilities. They apply principles from computer science, mathematics, and cognitive science to develop AI solutions for a wide range of applications. In manufacturing, AI Engineers play a crucial role in optimising production processes, implementing predictive maintenance systems, and developing quality control algorithms that leverage machine vision and sensor data. They work closely with industrial engineers and plant managers to integrate AI technologies that improve efficiency, reduce downtime, and enhance overall productivity on the factory floor.

In their day-to-day work, AI Engineers might be found designing neural network architectures, training machine learning models, or implementing natural language processing systems. They work with large datasets, powerful computing resources, and cutting-edge AI frameworks and tools.

The role of an AI Engineer requires a unique blend of technical expertise, creative problem-solving, and ethical consideration. They must have a deep understanding of AI algorithms and methodologies, proficiency in programming languages like Python or Java, and the ability to translate complex technical concepts into practical applications that can benefit businesses and society.

WHAT WILL YOU DO?

Your role may include duties as follows:

1. Design and implement machine learning and deep learning systems
2. Develop algorithms for natural language processing, computer vision, and robotics
3. Optimise AI models for performance, scalability, and efficiency
4. Collaborate with data scientists and domain experts to solve complex problems
5. Stay updated with the latest advancements in AI research and technologies

HOW TO BECOME A ARTIFICIAL INTELLIGENCE ENGINEER

Becoming an AI Engineer typically requires a strong educational background in computer science, mathematics, or a related field, often at the graduate level. Here are the steps to become an AI Engineer:

1. Earn a bachelor's degree in computer science, mathematics, or a related field
2. Gain proficiency in programming languages like Python, Java, or C++
3. Pursue a master's or Ph.D. in artificial intelligence, machine learning, or data science
4. Build a portfolio of AI projects and contribute to open-source AI initiatives
5. Research potential employers, look online for advertised jobs. Even if a job isn't advertised consider sending a resume and letter to an employer to show interest.
6. Stay updated with the latest AI research and technologies through continuous learning

VOCATIONAL EDUCATION & TRAINING

While AI Engineering typically requires advanced university education, there are vocational education and training options that can provide foundational skills or specialised knowledge in areas related to AI:

- Certificate IV in Information Technology (ICT40120)
- Diploma of Competitive Systems and Practices (MSS50322)
- Diploma of Applied Technologies (MEM50822)
- Advanced Diploma of Information Technology (ICT60220)

These courses can be valuable for those looking to enter supporting roles in AI development or to gain practical skills to complement their theoretical knowledge.

UNIVERSITY & HIGHER EDUCATION

A university degree is essential for most AI Engineer positions, with many roles requiring advanced degrees. A bachelor's degree in computer science, mathematics, or a related field provides the foundational knowledge in programming, algorithms, and data structures necessary for AI development.

However, many employers prefer candidates with a master's or doctoral degree in artificial intelligence, machine learning, or a related field. These advanced programs offer in-depth study of AI theories and methodologies, hands-on experience with AI tools and frameworks, and opportunities to conduct original research in the field.

Graduate programs often cover advanced topics such as deep learning, reinforcement learning, natural language processing, and computer vision. They also provide opportunities to work on real-world AI projects and collaborate with industry partners, preparing students for leadership roles in AI research and development.