



Humanoid Robotics – Electrical Engineer

Reports to: Head of Animatronics

Location: Miramar, Wellington

The purpose of the role is to design and implement advanced electrical systems for humanoid and creature robotics, working closely with mechanical and software teams to create cutting-edge robotics.

Key Accountabilities & Outcomes

- Design and implement electrical systems for complex robotic characters, ensuring high performance and reliability.
- Develop and build high quality control cabinets for power and control logic
- Design custom PCB's for power, encoder and communications
- Implement and troubleshoot with various communication protocols, such as RS485, CAN, CANFD, and EtherCAT.
- Design and implement robust cabling and connector systems for robotics applications.
- Collaborate with mechanical and software teams to integrate electrical systems seamlessly into robotic designs.
- Troubleshoot and resolve electrical issues in robotic systems.
- Develop and optimize control systems for robotic actuators and mechanisms.
- Contribute to developing standard operating procedures and documentation for robotic systems.

Skills & Experience

ESSENTIAL

- Bachelor's degree in Electrical Engineering or related field, or equivalent work experience
- Holding a National Certificate in Electrical Engineering Level 4.
- Proven experience in designing electrical systems for robotics or animatronics.
- Proficiency in electrical design software and PCB layout (e.g., Kicad).
- Experience with embedded systems and firmware development.
- Knowledge of motor control systems and actuator technologies.
- Knowledge of a range of encoder and feedback systems
- Familiarity with communication protocols such as RS485, CAN, CANOpenFD, and EtherCAT.
- Strong problem-solving skills and attention to detail.
- Ability to work in a fast paced environment

DESIRABLE

- Experience with Linux-based systems.
- Knowledge of 3D printing technologies in robotics.
- Familiarity with animatronics or creature effects in film and entertainment.
- Experience with vendor management and PCB manufacturing processes.

Key Working Relationships

INTERNAL

- Animatronics Team
- Head of Animatronics
- Project Supervisors
- Other Workshop HODs and Teams

Change to Job Description

JD Completed on: September 2024 Review Date: September 2024