# Core positions at Foshan Kaili Robotics Co., Ltd.

## Position 1: Operations Control Engineer

## Core Responsibilities

1. Responsible for the development, debugging and optimization of core motion control algorithms for robots (collaborative robotic arms, humanoid robots), including forward and inverse kinematics solutions, trajectory planning and interpolation algorithms.

2. A motion control module was built based on the ROS system. The algorithm and the electronic control system were integrated and tested. The algorithm parameters were then optimized using experimental data.

3. Collaborate with the structural and electrical control teams to resolve motion control implementation issues, ensuring the accuracy of the robot's end–effector trajectory and motion performance.

4. Support downstream customers or product managers to realize the robot's motion requirements and performance indicators in different application scenarios.

## Job Requirements

1. Bachelor's degree or above, Master's degree preferred, major in robotics, control theory and control engineering, automation or related fields.

2. At least 2 years of experience in developing or debugging robot motion control algorithms; preference will be given to candidates with experience in collaborative robotic arms and humanoid robots.

3. Proficient in C++/Python programming and familiar with the ROS framework and its motion control module.

4. Possess a solid grasp of robot kinematics and trajectory planning principles, and have the ability to apply basic control algorithms such as PID control.

5. Possesses excellent communication skills and is able to collaborate effectively with the hardware team and product team.

## Position 2: Electrical Control Engineer

## Core Responsibilities

1. Responsible for the entire process design of hardware solutions such as robot main control board and FOC motor driver, including schematic design, component selection, PCB layout, EMC optimization and production implementation;

2. Complete circuit board hardware debugging, software and hardware integration debugging, and electromechanical integration debugging to ensure that the product meets design, quality, and reliability standards;

3. Output hardware design documents, interface specifications, BOM list, and organize production and processing documents and testing standards;

4. Track the entire production process, optimize hardware architecture and power/signal management solutions, and collaborate across teams to solve technical issues such as mechanical–electrical control linkage and electromagnetic compatibility.

## Job Requirements

1. Bachelor's degree or above in Electronic Engineering, Automation, Communications, Computer Science, Mechatronics, or related fields;

2.3+ years of hardware development experience in the fields of robotics and industrial automation, with preference given to candidates who have full experience in the entire process of hardware product design to mass production;

3. Proficient in digital and analog circuit development, skilled in using EDA/PCB design software such as Altium Designer, proficient in low-voltage circuit design, power management and power distribution system design, signal integrity and signal management, with in-depth knowledge of electromagnetic compatibility (EMC/EMI) and anti-interference design theory, and able to use various testing instruments such as oscilloscopes and signal generators proficiently;

4. Proficient in FOC motor drive and servo motor control technology, proficient in high-speed industrial communication protocols such as EtherCAT, familiar with common communication protocols such as CAN, and capable of high-speed communication interface hardware design and debugging.

5. Familiar with sensor principles and selection, possessing the ability to design hardware architecture and optimize reliability of robot electronic control systems, and able to independently solve complex electromechanical linkage and hardware failure problems.

## Position 3: Product Manager (Robotics Focus)

## Core Responsibilities

This position primarily involves the full lifecycle management of robot products, with a focus on market and customer connections, product definition, and internal and external collaboration. Specific responsibilities include:

1. Industry and Market Insights: Gain in-depth understanding of the current status, development trends, product demands, and application scenarios of major competitors in different situations of the humanoid robot and semi-humanoid robot (broadly including robotic arms, etc.) industry.

2. Customer Needs Matching and Conversion: Directly connect with customers to understand their specific needs and translate them into clear product feature requirements. Simultaneously, based on the company's existing or procureable robot product capabilities, provide reverse recommendations to customers.

3. Product Planning and Definition: Based on market insights and customer feedback, clearly define the product solutions the company needs to develop or modify. In the medium to long term, participate in the planning of the company's own robot products, clarifying their market positioning and competitiveness.

4. Internal Development Collaboration: Serving as a bridge between the marketing and technical development teams, clearly communicating product requirements to the internal development team and guiding the development direction.

## Job Requirements

1. Work Experience: At least three years of relevant work experience in the robotics industry is required. The industry scope covers robots in a broad sense, including humanoid robots, bipedal/wheeled robots, industrial robotic arms, and collaborative arms.

2. Educational requirements: Bachelor's degree or above.

3. Professional background: Applicants should have a background in mechanical, robotics or related engineering fields. Development experience is not required, but applicants must understand the technology and be familiar with the basic principles and technological trends of robot products.

4. Gender requirement: No specific requirement.

5. Industry Interest: Must have a strong interest in the robotics industry and be willing to develop and continuously learn in this field.

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