

Job Description

Job Title:	RoboHub Engineering Manager
Department:	Mechanical and Mechatronics Engineering
Reports To:	RoboHub Director
Jobs Reporting:	RoboHub Staff and Co-op students
Salary Grade:	USG 10
Effective Date:	November 2019

Primary Purpose

The RoboHub Manager independently manages day-to-day operations and maintenance of the Waterloo RoboHub as well as any of its robots and other equipment located (temporarily or permanently) outside of the RoboHub facility. The Manager supervises staff and co-ops, and co-supervises researchers, working in the RoboHub (coordinating with the Director) and acts as a liaison for them with the RoboHub Research and Operations Committee (ROC). The Manager is responsible for ensuring proper health and safety protocols are followed within the RoboHub and provides administrative support to the RoboHub Director. The Manager also provides lab support to the Principal Investigators (PIs) and their associated research teams to maintain the day-to-day operations of their RoboHub-based research, including co-supervising grad students and post-docs, providing safety training, and assisting with research experiment designs.

Key Accountabilities

Manage the day-to-day operations, maintenance, and service tasks for the Waterloo RoboHub

- Perform and/or oversee the specification, evaluation, sourcing, purchasing, installation, operation, and maintenance of all RoboHub robots, sensors, computers, and other equipment (valued >\$4.5M) including repairing and/or replacing equipment in consultation with researchers and vendors
- Investigate, evaluate, and implement an accessible method for tracking and managing the allocation and reservation of both use of the RoboHub and its equipment for all lab users and visitors
- Perform and/or oversee the development of a common software interface for the robots
- Develop and implement a method for researchers, visiting academics, and industrial partners to use the RoboHub resources (including staff) to perform research and/or technical project tasks
- Establish and maintain relationships with sales representatives for all robots and equipment
- Produce and maintain an inventory of RoboHub resources (or oversee the same)
- Investigate, recommend, and procure new and/or updated robotics technologies (hardware and software) to improve the capabilities of the RoboHub and enable state of the art research
- Preparation of all required documentation to facilitate the procurement of new equipment
- Initiate or oversee regular lab maintenance and minor work requests

Supervise RoboHub staff & co-ops and co-supervise researchers on behalf of the ROC

- Oversight of all RoboHub staff, some of whom may have functional supervision responsibilities
- Functional (in-lab) supervision of all students and other researchers in the RoboHub
- Co-supervision of all RoboHub technical staff (in tandem with the RoboHub Director)
- Supervision of all RoboHub administrative staff (overseen by the RoboHub Director)
- (Co-)supervision of capstone projects, research assistants, co-op students, and project engineers
- Assume RoboHub technician duties in times of short-term need (e.g. absence) as required
- Train or facilitate the training of incoming RoboHub personnel on an as needed basis
- Hire and oversee the work of casual employees (e.g., contractors, work term students, URAs, etc.)

Ensure proper health and safety protocols are followed for all RoboHub equipment

- Manage the development and implementation of all safety policies and operational procedures
- Coordinate, provide, maintain, and verify up to date safety training for all users of the RoboHub
- Verify that all researchers receive the appropriate safety training for their needs and coordinate with all RoboHub users to facilitate and enable access to the RoboHub facility and its equipment
- Verify that equipment is being used safely and Standard Operating Procedures (SOPs) are followed
- Responsible for ensuring equipment log books and operational manuals are kept up to date, as well as performing and/or overseeing routine maintenance and arranging technical support when needed
- Develop and implement best practices in the lab to maintain overall cleanliness of the space

Support the PIs (incl. the Director) and their associated research teams

- Provide hands-on co-supervision of grad students on topics related directly to RoboHub robots
- Assist with the design of research experiments and oversee their execution in the RoboHub
- Support the RoboHub Director and other PIs in writing research funding applications in robotics and infrastructure utilization progress reports for the Federal and Provincial Governments
- Support the researchers with their research dissemination through analysis and documentation of experimental results for the purposes of generating journal and conference publications
- Provide general administrative and research supervision support for the RoboHub Director
- Assist with special projects and other RoboHub-related activities assigned by the Director

Promotion of the Waterloo RoboHub to the local, national, and international community

- Coordination and organization of outreach demos and activities for K-12 and undergrad students
- Organization of tours for academic, industry, government, and foreign visitors
- Coordinate exhibits and presentations at leading academic and industrial robotics conferences
- Organization of conferences, public events, and academic workshops hosted by the RoboHub, including offering training courses on robotics for HQP and industry partners
- Hosting new and existing local and global research-driven robotics challenges and competitions
- Responsible for sharing open source software and hardware resources to the global community
- Responsible for coordinating with industry sponsors and other partners who wish to collaborate with the researchers at the RoboHub on research and/or technical projects
- Assist the Director with fundraising and sponsorship initiatives for the RoboHub
- Development of membership and sponsorship models to enable academics and industry to “join” the RoboHub
- Responsible for content management and updates to all web and social media resources

**All employees of the University are expected to follow University and departmental health and safety policy, procedures and work practices at all times. Employees are also responsible for the completion of all health and safety training, as assigned. Employees with staff supervision and/or management responsibilities will ensure that assigned staff abide by the above, and actively identify, assess and correct health and safety hazards, as required.*

Required Qualifications

Education

- Masters degree in Mechanical/Electrical Engineering or closely related discipline (PhD preferred)
- Must be eligible and willing to apply for a Professional Engineer (P.Eng.) in Ontario

Experience

- 1-2 years of experience with lab operations and standard operating procedures in lab environments
- 1-2 years of experience designing experiments in lab environments
- 1-2 years of administrative & customer service experience, preferably in an academic environment
- Proven high-quality customer service interactions with faculty, staff, and students

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- Demonstrated ability to maintain strict confidentiality
- Knowledge of University of Waterloo policies and procedures are an asset
- Experience working in advanced robotics (including ROS familiarity) is an asset
- Experience conducting research in robotics (including publications on the same) is an asset
- Experience with finances, budgeting, and procurement procedures is an asset
- Experience with the supervision of research and/or student projects is an asset
- Proven ability to develop and apply health and safety policies and guidelines is an asset

Knowledge/Skills/Abilities

- Intermediate computer skills and knowledge of software applications used in an office setting, including Word and Excel
- Proven aptitude for attention to detail and the management of multiple demands
- Demonstrated decision-making skills, including the ability to ask probing questions and anticipate customer needs
- Ability to exercise good judgement and discretion and work independently with minimal supervision within a fast-paced, deadline-driven multitasking environment
- Excellent communication skills, oral and written
- Solid organizational skills and leadership capabilities are necessary
- Superior ability to build and manage interpersonal relationships with Technical and Administrative Staff, Faculty members, students, Chairs/Associate Chairs, and external sales reps and vendors
- Proven capability to make sound independent decisions related to the operation and maintenance of labs and equipment
- Strength in problem solving and driving continual improvement and positive change
- The incumbent will be required to take (or have taken) courses, workshops, and training related to Human Resource Management and Health & Safety in order to maintain current in both fields

Nature and Scope

- **Contacts:** Internally, extensive and regular contact, training, and (co-)supervision of all RoboHub staff, students, and researchers. Regular contact with RoboHub PIs and their research teams as well as members of the Engineering Research office, Engineering Dean's Office, UW Government Relations, UW Media Relations, the AI Institute, and other groups on campus who regularly use/tour/exhibit the RoboHub. Externally, regular contact with sales representatives from robotics and robotics-related industries, academics from other institutions both within Canada and internationally, both new and existing industrial contacts from around the world, and media requests from news and entertainment outlets locally, nationally, and globally.
- **Level of Responsibility:** The position functions with minimal supervision and is responsible for the day-to-day decision-making required to keep the RoboHub running smoothly at all times, while adhering to health and safety protocols. Must respond regularly and independently to inquiries that are specific in nature and require thorough knowledge of established policies and procedures. Independent judgment required in time management, task prioritization and resolving routine issues. Responsible for (co-)supervising and training staff, students, and researchers (including safety training). Functionally responsible for all small to medium purchases for the RoboHub.
- **Decision-Making Authority:** Responsible for making decisions regarding equipment maintenance and repair, access to the lab and safety in the lab.
- **Physical and Sensory Demands:** Physical conditions vary from working in an office environment to demands typical of a technical position in a research/teaching lab environment. Demands from multiple projects that need to be accommodated simultaneously. Such positions could involve some lifting possibly up to 50lbs. Times of sitting and/or standing for extended amounts of time also may be encountered. Strong ability to deal with emergencies in relation to equipment and/or health and safety.

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is required. Attention to detail and generally being observant are critical assets when working with experimental robots and untested robot controllers.

- **Working Environment:** Regular working hours required, majority of time spent in a lab environment with researchers and students. Safety is a primary requirement in the operation of teaching/research labs, which in the RoboHub will include a wide variety of hazards related to high impact kinetic motion, electrical systems with up to 30 kW of power, and hazardous materials (high energy-density batteries).