

position description

Date: September 2017

Title: Engineer 1

Department: Biomedical Engineering

School: Case School of Engineering

Location: Bingham 308

Supervisor Name and Title: Ron Triolo, Professor

POSITION OBJECTIVE

Under general supervision, perform engineering objectives as a member of multidisciplinary research and development teams designing and investigating new medical devices and restorative technologies, and provide high level computing infrastructure support. Responsible for microprocessor, mobile device, or computer based software system design, testing and operation on specific research and development projects for new assistive technologies for individuals with neuro-musculo-skeletal disabilities, limb loss or cognitive dysfunction. The engineer will apply methods and techniques, adjust and correlate data, determine errors in results, and follow the operation through a series of related steps to completion.

ESSENTIAL FUNCTIONS

1. Develop embedded control and operating systems for new and emerging assistive technologies and medical devices, and create both low and high level user and clinician interfaces. (20%)
2. Set system processing specifications, design and verify software operation of new computer-microprocessor- or mobile computing platform-based assistive technologies. (20%)
3. Construct embedded applications and integrate information from networks of distributed sensors in new medical devices. (20%)
4. Identify the work to be done to fulfill project requirements and objectives, plan and carry out the procedural and technical steps required, seek assistance as needed, independently coordinate work efforts with outside parties, and characteristically submit only completed work. (10%)
5. Design, maintain and interrogate databases for research-related operational information. (10%)
6. Fully document, test and validate design and system performance according to standard design controls and quality system practices, including incident reporting, error/bug tracking and repair, and version/release control. (10%)
7. Coordinate and supervise the activities of part-time students hired to execute low level administrative software support like data entry or inventory control, as well as graduate students developing project-specific hardware or software. (10%)

NONESSENTIAL FUNCTIONS

Perform other duties as assigned.

CONTACTS

Department: Meet regularly with supervisor regarding assignments. Interact with other engineers in department. Work closely with project team members as well as other members of the technical and operations team including but not limited to the Quality System and Regulatory Specialists, and other biomedical, electronic or mechanical engineers.

University: Occasional contact with other departments.

External: Contact with research subjects at the Louis Stokes Cleveland VAMC. Contact with surgeons, therapist and other clinical personnel.

Students: Interaction with students working on projects.

SUPERVISORY RESPONSIBILITY

Supervise the activities of part-time students hired to execute low level administrative software support like data entry or inventory control, as well as graduate students developing project-specific hardware or software.

QUALIFICATIONS

Experience: 1 to 3 years of experience, with at least 1 year of research and development experience.

Education/Licensing: Bachelor's degree in Biomedical or Electrical Engineering, Computer Science, Computer Engineering or related field; Master's degree preferred.

REQUIRED SKILLS

1. Knowledge of digital system and computer design, computer programming, signal processing and sensor technology, data acquisition and electronic instrumentation are required.
2. Experience in developing hardware interface and programming embedded systems such as microcontrollers or microprocessors
3. Knowledge and ability to apply the principles, theories, concepts and practices of the engineering profession and ability to keep abreast of changes in technology and utilize the most current information to engineer solutions to technical problems

WORKING CONDITIONS

The work environment for this job is indoors and primarily computer based. Therefore, there will be a large amount of time spent at a desk. When working with other Engineers and Therapists on technology that is ready for the clinic there will be walking to the VAMC that is approximately 10 minutes from the Case campus. At that location the Engineer will work as a team with research subjects at the VA. There will be minimal travel to conferences possible.