Summer Internships - '15

Enova Robotics - Pépinière d'Entreprise, Route de la Ceinture, Sousse - Tunisia

Table of Contents

Who we are

We are a tunisian startup that specializes in mobile robot development and robotics R&D projects. We design, build and program indoor and outdoor mobile robots for research, education and security purposes. Our solutions are robust and affordable.

Enova Robotics has a fast paced work environment and we seek talented employees who crave learning new skills and aren't afraid to tackle big projects. As an intern you will get to work with our team, while working on real projects that will help us grow.

Our ideal candidate is someone who walks into a room of people and can't leave without making a few friends. Someone who is obsessed with technology and is creative and thoughtful.

We value all of our interns and go the extra mile to make sure you receive a learning experience that fits your career goals. You will become knowledgeable in robotics and use world class tools like the Robot Operating System (ROS) and the robotics simulator Gazebo. You will also learn how to work in a professional environment and improve your working skills.
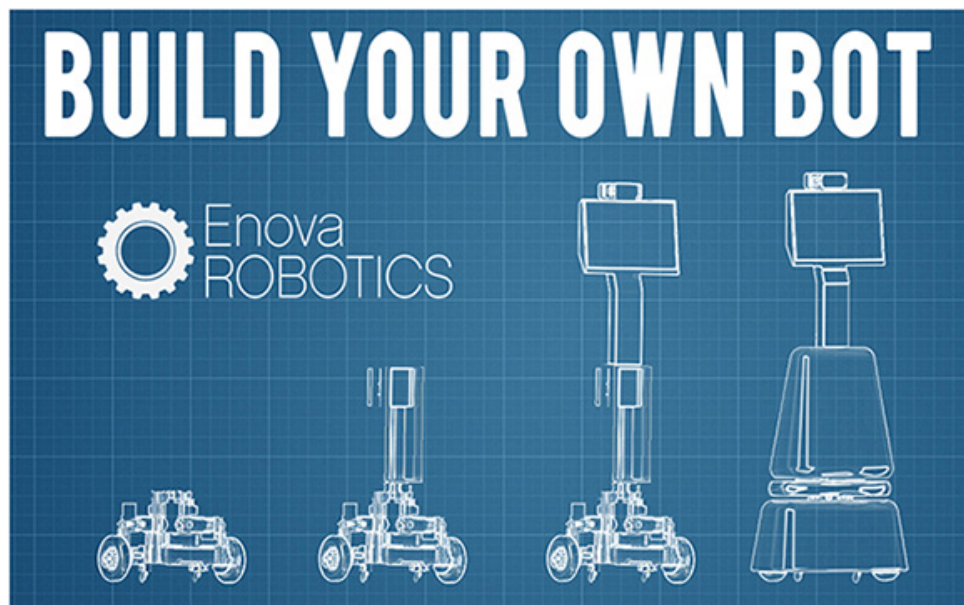
How To Apply

You should consult this catalog and choose the internship that is suitable to your profile (requirements, period ...) before submitting your application.

In order to apply:

1- Prepare a cover letter describing your motivations towards the subject

2- Prepare a detailed CV

3- Attach these documents to an email containing the title of the internship and its reference

in the subject of the email.

It is possible to apply for different topics.

All the applications should be sent to **ines.benabdallah@enovarobotics.eu**

Internship : MATLAB GUI for The Mini-Lab Robot

REF: SE01S15

Under the supervision of a software engineer, you will develop a Matlab Graphical User Interface that interfaces with the Mini-Lab educational robot and control it through matlab code. Once this step is cleared, the development will move toward the creation of Simulink blocks that enable visual programming of the robot. The resulting interface will be bundled with our Mini-Lab educational offer.

What You Will Learn:

The Robot Operating System (ROS), a prominent middleware for robotics.

The robotics simulator Gazebo.

Several robotics topics and insights.

Proficiency in C++, python and matlab.

Proficiency in Linux.

Plenty of additional opportunities in related projects.

What We Require:

Good Linux proficiency

Good programming skills, mainly matlab and c++

Organized, with an ability to prioritize time-sensitive assignments

Creative and Flexible

Details:

This is a two-month long internship. We ideally expect a second year engineering student or equivalent competency level. You can jump-start your internship and learn more about Matalb-ROS bridge here : mathworks.com/hardware-support/robot-operating-system.html

Internship : Scratch GUI for The Mini-Lab Robot

REF: SE02S15

Under the supervision of a software engineer, you will develop a Scratch based Graphical User Interface that interfaces with the Mini-Lab educational robot. MIT-developed Scratch is a desktop and online multimedia authoring tool that helps young people learn computer science. You will Integrate sensory flows and high level algorithms in a blocks based programming approach. Your work will help young people use and learn a real robotic system and promote the Mini-Lab.

What You Will Learn:

The Robot Operating System (ROS), a prominent middleware for robotics

The robotics simulator Gazebo

Scratch, an MIT-developed authoring tool and programming language

Several robotics topics and insights

Proficiency in C++ and python

Proficiency in Linux

Plenty of additional opportunities in related projects

What We Require:

Good Linux proficiency

Good programming skills, mainly python and c++

Organized, with an ability to prioritize time-sensitive assignments

Creative and Flexible

Details:

This is a two-month long internship. We ideally expect a second year engineering student or equivalent competency level. You can start coding right away using the following tutorials : http://wiki.ros.org/scratch

Internship : Gazebo Web Client - Gzweb

REF: SE03S15

Under the supervision of a software engineer, you will install and run Gzweb on a server-side. Gzweb is a WebGL client for the robotic simulator Gazebo. Afterwards, you'll port the simulation of our current robots from Gazebo to its web counterpart. Finally, you will integrate our own simulation modules with Gzweb. Your work will enable users and customers to test drive our robots from the comfort of their browsers.

What You Will Learn:

The Robot Operating System (ROS), a prominent middleware for robotics

The robotics simulator Gazebo

Gzweb, the web client of Gazebo

Several robotics topics and insights

Proficiency in C++, urdf, sdf and javascript

Proficiency in Linux.

Plenty of additional opportunities in related projects

What We Require:

Good Linux proficiency

Good programming skills, mainly javascript and c++

Organized, with an ability to prioritize time-sensitive assignments

Creative and Flexible.

Details:

This is a two-month long internship. We ideally expect a second year engineering student or equivalent competency level. You can start coding right away using the following tutorials : http://gazebosim.org/tutorials?cat=gzweb

Internship : Sensors Integration Protocol

REF: SE04S15

Under the supervision of an electronic engineer, you will design a serial communication protocol that organizes the data transfer between Arduino cards and a robot's embedded computer. Your protocol will interact with a rich array of sensors and return a compact message. You will test sensor routines for integration with the Robot Operating System (ROS) and for calibration, and write sensors integration tutorials for ROS wikis.

What You Will Learn:

The Robot Operating System (ROS), a prominent middleware for robotics.

The robotics simulator Gazebo

Serial bridging between arduino and a robotics middleware

Several robotics topics and insights

Proficiency in C++ and Arduino

Proficiency in Linux

Plenty of additional opportunities in related projects

What We Require:

Good Linux proficiency

Good programming skills, mainly c++ and Arduino

Relevant experience with proximity sensors

Organized, with an ability to prioritize time-sensitive assignments.

Creative and Flexible.

Details:

This is a one-month long internship. We ideally expect a second year engineering student or equivalent competency level. Electronics expertise is highly recommended.

Internship : Communication Protocols - UDPROS

REF: SE05S15

Under the supervision of an electronic engineer, you will modify existing code for robots teleoperation and audio and video streaming. You will change the transportation protocol from TCP to UDP and benchmark both solutions. UDPROS transport is useful when latency is more important than reliable transport. Hence, your work will vastly improve our robots teleoperation and streaming capabilities.

What You Will Learn:

The Robot Operating System (ROS), a prominent middleware for robotics.

The robotics simulator Gazebo

UDPROS, along TCPROS.

Several robotics topics and insights

Proficiency in C++ and Linux

Plenty of additional opportunities in related projects

What We Require:

Good Linux proficiency

Good programming skills, mainly c++

Relevant experience with communication protocol and audio and video steaming

Organized, with an ability to prioritize time-sensitive assignments.

Creative and Flexible.

Details:

This is a one-month long internship. We ideally expect a second year engineering student or equivalent competency level. More info on UDPROS : http://wiki.ros.org/ROS/UDPROS

Internship : ROS Wiki Entry for the Mini-Lab Robot

REF: SE06S15

Under the supervision of a software engineer, you will write and update the documentation of the Mini-Lab educational robot. You will learn Mini-Lab capabilities, sensors and its programming. Finally you will write a wiki entry in the Robot Operating System (ROS) wiki, following their guidelines. Your work will greatly boost Mini-Lab visibility.

What You Will Learn:

The Robot Operating System (ROS), a prominent middleware for robotics.

The robotics simulator Gazebo

The Mini-Lab educational robot

Several robotics topics and insights

Proficiency in C++, Python, XML and Linux

Plenty of additional opportunities in related projects

What We Require:

Good Linux proficiency

Good programming skills

Good english writing skills

Organized, with an ability to prioritize time-sensitive assignments.

Creative and Flexible.

Details:

This a one-month long and an entry level internship. We're looking for a motivated student in a computer science or mechatronics curriculum. ROS Robots Wiki : http://wiki.ros.org/Robots

Internship : Graphic Design and SEO

REF: MR01S15

Under the supervision of a software engineer, you will create graphics, visual designs, and layouts for web and print media. You will design assets and layouts for sales presentations and marketing collateral and collaborate with the team to deliver high quality designs efficiently. You will assist with brainstorming, implementing design concepts, infographics, and any other design needs. Moreover, you will improve our website indexation by applying search optimization techniques. You work will greatly help the company's marketing effort.

What You Will Learn:

Proficiency in graphic design

Search Engine Optimization

Google Analytics

Several robotics topics and insights

Plenty of additional opportunities in related projects

What We Require:

Design theory

Good proficiency in Adobe creative suite, mainly Photoshop, Indesign and AfterEffects.

Previous experience with Search Engine Optimization (SEO)

Good english writing skills

Organized, with an ability to prioritize time-sensitive assignments.

Creative and Flexible.

Details:

This a one-month long and an entry level internship. We're looking for a creative student willing to enhance his design portfolio.