

Software Engineering Internships - Summer 2021

Seeking talented summer interns to be part of the IHMC Robotics Team to develop software tools for controlling bipedal and quadruped walking robots and exoskeletons.

We are seeking interns for the following areas:

- **Control Communication.** Seeking capable engineer for designing software to communicate with a C++ hardware interface using LCM messages called by Java.
- **Perception.** This includes processing Lidar, stereo vision, localization, object segmentation, and manipulating point clouds. We are particularly interested in the ability to integrate off-the-shelf hardware into a robotic system with the ability to broadcast image data over wireless communication and ROS messages.
- **Controls.** Control algorithms for locomotion. This can include balance, optimization, and state estimation.
- **Planning.** Valid foot placements, body path planning, foot step planning.

Internships are available for students who are currently pursuing an undergraduate or graduate degree in engineering, computer science, or related field.

Ideal internship candidate should have the ability to write clean code in Java to the highest standards, have an understanding of advanced object-oriented programming concepts, and have excellent analytical, problem solving, and organizational skills. Applicants must have excellent communication and documentation skills, be self-motivated and function with little micro-management, thriving in both a team and individual environment.

To Apply: Complete the timed Java challenge at HackerRank by going to the following link: <http://hr.gs/ihmc2021>

Please note that the Java programming challenge is difficult and you will be

given up to 16 hours to complete it. The challenge contains some straightforward robotics problems, as well as some more complex programming challenges. The challenge cannot be paused, so only begin it when you are ready and have allotted adequate time and brainpower to complete the challenge. In addition, you will be asked to upload your resume to the site during the challenge.

Once you have completed the Java challenge, we require that you submit a PDF of your CV/resume with filename as LastName_Resume and a one-page cover letter. In addition, we ask that you submit a 1 minute video of you discussing how you solved one of the programming challenges. The purpose of this video is to demonstrate your communication skills. From the HackerRank programming questions you just completed, choose one of the for which you can clearly describe your solution. You can see a sample video at: <https://youtu.be/LOUHxVktayw>

The video should:

- Introduce yourself (first and last name, etc)
- Include your talking about your solution to one of the programming challenges
- Be 1 minute (+/- 15 seconds) in length
- Have clear audio

Email your application to: robotjobs@ihmc.us

The subject of the email must be: **2021 Software Internship -**

YourLastName Include the following items as attachments in the email:

Current resume in pdf format. Name your file: "YourLastName_Resume.pdf"

Cover letter in pdf format. Name your file: "YourLastName_CoverLetter.pdf".

In the cover letter, include the following items:

- ◆ Dates you are available for an internship. Note you must be available full time.
- ◆ Describe your relevant software engineering experience.
- ◆ Discuss why you are interested in an internship at IHMC.
- ◆ Provide link (URL) to your YouTube video.
- ◆ Provide email and phone number for three (3) professional references.

For example, the subject line of an email application for John Smith would be:
2021 Software Internship – Smith
His resume file would be titled: Smith_Resume.pdf
His cover letter file would be titled: Smith_CoverLetter.pdf

Your score on the Java programming challenge will be factored into your application and is required to apply for this position. Team IHMC develops almost exclusively in Java and therefore new team members must be effective Java programmers. If you are proficient in other programming languages and wish to learn Java, we recommend reading “Thinking in Java” by Bruce Eckel, and installing the Eclipse IDE to quickly get up and running. If you want to practice on programming similar programming challenges, before trying the IHMC challenge, we suggest getting an account at HackerRank and trying out some of their warmup challenges at <https://www.hackerrank.com/categories/algorithms/warmup>

This summer internship is for a full-time, paid position in Pensacola, Florida. You must be available every day during regular work hours, for a minimum of 9 weeks and be authorized to work in the United States.

Updates to this announcement may appear at ihmc.us/opportunities

Questions: robotjobs@ihmc.us

Location: Institute for Human and Machine Cognition (IHMC), Pensacola, FL

Application Deadline: April 2, 2021

Please note that it is possible that there may be delays in this internship start date and/or IHMC building closures due to the COVID-19 pandemic.

IHMC is an Equal Opportunity/Affirmative Action employer. All qualified applicants will receive consideration for employment without regard to race, color, religion, sex, sexual orientation, national origin, disability, or protected Veteran status.