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| | Titolo | Real-Time IoT Imaging with Deep Neural Networks : Using Java on the Raspberry Pi 4 / / by Nicolas Modrzyk |
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| | ISBN | 9781484257227<br>1484257227 |
| | Edizione | [1st ed. 2020.] |
| | Descrizione fisica | 1 online resource (XXI, 224 p. 157 illus.) |
| | Disciplina | 004.7 |
| | Soggetti | Computer input-output equipment<br>Java (Computer program language)<br>Machine learning<br>Hardware and Maker<br>Java<br>Machine Learning |
| | Lingua di pubblicazione | Inglese |
| | Formato | Materiale a stampa |
| | Livello bibliografico | Monografia |
| | Nota di contenuto | Chapter 1: Getting Started -- Chapter 2: Object Detection in Video Streams -- Chapter 3: Vision on Raspberry 4 -- Chapter 4: Analyzing Video Streams on the Raspberry -- Chapter 5: Vision and Home Automation.-. |
| | Sommario/riassunto | This book shows you how to build real-time image processing systems all the way through to house automation. Find out how you can develop a system based on small 32-bit ARM processors that gives you complete control through voice commands. Real-time image processing systems are utilized in a wide variety of applications, such as in traffic monitoring systems, medical image processing, and biometric security systems. In Real-Time IoT Imaging with Deep Neural Networks, you will learn how to make use of the best DNN models to detect object in images using Java and a wrapper for OpenCV. Take a closer look at how Java scripting works on the Raspberry Pi while preparing your Visual Studio code for remote programming. You will also gain insights on image and video scripting. Author Nicolas Modrzyk shows you how to use the Rhasspy voice platform to add a |

powerful voice assistant and completely run and control your Raspberry Pi from your computer. To get your voice intents for house automation ready, you will explore how Java connects to the MQTT and handles parametrized Rhasspy voice commands. With your voice-controlled system ready for operation, you will be able to perform simple tasks such as detecting cats, people, and coffee pots in your selected environment. Privacy and freedom are essential, so priority is given to using open source software and an on-device voice environment where you have full control of your data and video streams. Your voice commands are your own—and just your own. With recent advancements in the Internet of Things and machine learning, cutting edge image processing systems provide complete process automation. This practical book teaches you to build such a system, giving you complete control with minimal effort. You Will: Show mastery by creating OpenCV filters Execute a YOLO DNN model for image detection Apply the best Java scripting on Raspberry Pi 4 Prepare your setup for real-time remote programming Use the Rhasspy voice platform for handling voice commands and enhancing your house automation setup.