

# Android Application Programming with OpenCV

Build Android apps to capture, manipulate, and track objects in 2D and 3D

Joseph Howse

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# **Android Application Programming With Opency Howse Joseph**

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# **Android Application Programming With Opency Howse Joseph:**

**Android Application Programming with OpenCV** Joseph Howse, 2013-09-25 A step by step tutorial to help you master computer vision and mobile app development This book is for Java developers who are new to computer vision and who would like to learn about how it is used in relation to application development It is assumed that you have previous experience in Java but not necessarily Android A basic understanding of image data for example pixels and color channels would be helpful too You are expected to have a mobile device running Android 2 2 Froyo or greater and it must have a **Android Application Programming with Opency 3** Joseph Howse, 2015-06-26 If you are a Java developer who camera is new to computer vision and would like to learn through application development then this book is for you You are expected to have a mobile device running Android 2 2 Froyo or greater including a camera Experience in Java is a must Application Development with OpenCV 3 Joseph Howse, 2016-06-30 Create four mobile apps and explore the world through photography and computer vision About This Book Efficiently harness iOS and OpenCV to capture and process high quality images at high speed Develop photographic apps and augmented reality apps guickly and easily Detect recognize and morph faces and objects Who This Book Is For If you want to do computational photography and computer vision on Apple s mobile devices then this book is for you No previous experience with app development or OpenCV is required However basic knowledge of C or Objective C is recommended What You Will Learn Use Xcode and Interface Builder to develop iOS apps Obtain OpenCV s standard modules and build extra modules from source Control all the parameters of the iOS device s camera Capture save and share photos and videos Analyze colors shapes and textures in ordinary and specialized photographs Blend and compare images to create special photographic effects and augmented reality tools Detect faces and morph facial features Classify coins and other objects In Detail iOS Application Development with OpenCV 3 enables you to turn your smartphone camera into an advanced tool for photography and computer vision Using the highly optimized OpenCV library you will process high resolution images in real time You will locate and classify objects and create models of their geometry As you develop photo and augmented reality apps you will gain a general understanding of iOS frameworks and developer tools plus a deeper understanding of the camera and image APIs After completing the book s four projects you will be a well rounded iOS developer with valuable experience in OpenCV Style and approach The book is practical creative and precise It shows you the steps to create and customize five projects that solve important problems for beginners in mobile app development and computer vision Complete source code and numerous visual aids are included in each chapter Experimentation is an important part of the book You will use computer vision to explore the real world and then you will refine the projects based on your findings Learning OpenCV 3 Computer Vision with Python Joe Minichino, Joseph Howse.2015-09-29 Unleash the power of computer vision with Python using OpenCV About This Book Create impressive applications with OpenCV and Python Familiarize yourself with advanced machine learning concepts Harness the power of

computer vision with this easy to follow guide Who This Book Is For Intended for novices to the world of OpenCV and computer vision as well as OpenCV veterans that want to learn about what s new in OpenCV 3 this book is useful as a reference for experts and a training manual for beginners or for anybody who wants to familiarize themselves with the concepts of object classification and detection in simple and understandable terms Basic knowledge about Python and programming concepts is required although the book has an easy learning curve both from a theoretical and coding point of view What You Will Learn Install and familiarize yourself with OpenCV 3 s Python API Grasp the basics of image processing and video analysis Identify and recognize objects in images and videos Detect and recognize faces using OpenCV Train and use your own object classifiers Learn about machine learning concepts in a computer vision context Work with artificial neural networks using OpenCV Develop your own computer vision real life application In Detail OpenCV 3 is a state of the art computer vision library that allows a great variety of image and video processing operations Some of the more spectacular and futuristic features such as face recognition or object tracking are easily achievable with OpenCV 3 Learning the basic concepts behind computer vision algorithms models and OpenCV s API will enable the development of all sorts of real world applications including security and surveillance Starting with basic image processing operations the book will take you through to advanced computer vision concepts Computer vision is a rapidly evolving science whose applications in the real world are exploding so this book will appeal to computer vision novices as well as experts of the subject wanting to learn the brand new OpenCV 3 0 0 You will build a theoretical foundation of image processing and video analysis and progress to the concepts of classification through machine learning acquiring the technical know how that will allow you to create and use object detectors and classifiers and even track objects in movies or video camera feeds Finally the journey will end in the world of artificial neural networks along with the development of a hand written digits recognition application Style and approach This book is a comprehensive guide to the brand new OpenCV 3 with Python to develop real life computer vision **OpenCV for Secret Agents** Joseph Howse, 2015-01-28 This book is for programmers who want to expand applications their skills by building fun smart and useful systems with OpenCV The projects are ideal in helping you to think creatively about the uses of computer vision natural user interfaces and ubiquitous computers in your home car and hand **Pvthon** Game Programming By Example Alejandro Rodas de Paz, Joseph Howse, 2015-09-28 A pragmatic guide for developing your own games with Python About This Book Strengthen your fundamentals of game programming with Python language Seven hands on games to create 2D and 3D games rapidly from scratch Illustrative guide to explore the different GUI libraries for building your games Who This Book Is For If you have ever wanted to create casual games in Python and you would like to explore various GUI technologies that this language offers this is the book for you This title is intended for beginners to Python with little or no knowledge of game development and it covers step by step how to build seven different games from the well known Space Invaders to a classical 3D platformer What You Will Learn Take advantage of Python's clean syntax to

build games quickly Discover distinct frameworks for developing graphical applications Implement non player characters NPCs with autonomous and seemingly intelligent behaviors Design and code some popular games like Pong and tower defense Compose maps and levels for your sprite based games in an easy manner Modularize and apply object oriented principles during the design of your games Exploit libraries like Chimpunk2D cocos2d and Tkinter Create natural user interfaces NUIs using a camera and computer vision algorithms to interpret the player's real world actions In Detail With a growing interest in learning to program game development is an appealing topic for getting started with coding From geometry to basic Artificial Intelligence algorithms there are plenty of concepts that can be applied in almost every game Python is a widely used general purpose high level programming language It provides constructs intended to enable clear programs on both a small and large scale It is the third most popular language whose grammatical syntax is not predominantly based on C Python is also very easy to code and is also highly flexible which is exactly what is required for game development The user friendliness of this language allows beginners to code games without too much effort or training Python also works with very little code and in most cases uses the use cases approach reserving lengthy explicit coding for outliers and exceptions making game development an achievable feat Python Game Programming by Example enables readers to develop cool and popular games in Python without having in depth programming knowledge of Python The book includes seven hands on projects developed with several well known Python packages as well as a comprehensive explanation about the theory and design of each game It will teach readers about the techniques of game design and coding of some popular games like Pong and tower defense Thereafter it will allow readers to add levels of complexities to make the games more fun and realistic using 3D At the end of the book you will have added several GUI libraries like Chimpunk2D cocos2d and Tkinter in your tool belt as well as a handful of recipes and algorithms for developing games with Python Style and approach This book is an example based guide that will teach you to build games using Python This book follows a step by step approach as it is aimed at beginners who would like to get started with basic game development By the end of this book you will be competent game developers with good knowledge of programming in Python **OpenCV 4 for Secret** Agents Joseph Howse, 2019-04-30 Turn futuristic ideas about computer vision and machine learning into demonstrations that are both functional and entertaining Key FeaturesBuild OpenCV 4 apps with Python 2 and 3 on desktops and Raspberry Pi Java on Android and C in UnityDetect classify recognize and measure real world objects in real timeWork with images from diverse sources including the web research datasets and various camerasBook Description OpenCV 4 is a collection of image processing functions and computer vision algorithms It is open source supports many programming languages and platforms and is fast enough for many real time applications With this handy library you ll be able to build a variety of impressive gadgets OpenCV 4 for Secret Agents features a broad selection of projects based on computer vision machine learning and several application frameworks To enable you to build apps for diverse desktop systems and Raspberry Pi the book supports

multiple Python versions from 2 7 to 3 7 For Android app development the book also supports Java in Android Studio and C in the Unity game engine Taking inspiration from the world of James Bond this book will add a touch of adventure and computer vision to your daily routine You ll be able to protect your home and car with intelligent camera systems that analyze obstacles people and even cats In addition to this you ll also learn how to train a search engine to praise or criticize the images that it finds and build a mobile app that speaks to you and responds to your body language By the end of this book you will be equipped with the knowledge you need to advance your skills as an app developer and a computer vision specialist What you will learnDetect motion and recognize gestures to control a smartphone gameDetect car headlights and estimate their distanceDetect and recognize human and cat faces to trigger an alarmAmplify motion in a real time video to show heartbeats and breathsMake a physics simulation that detects shapes in a real world drawingBuild OpenCV 4 projects in Python 3 for desktops and Raspberry PiDevelop OpenCV 4 Android applications in Android Studio and UnityWho this book is for If you are an experienced software developer who is new to computer vision or machine learning and wants to study these topics through creative projects then this book is for you The book will also help existing OpenCV users who want upgrade their projects to OpenCV 4 and new versions of other libraries languages tools and operating systems General familiarity with object oriented programming application development and usage of operating systems OS developer tools Mastering OpenCV Android Application Programming Salil Kapur, Nisarg and the command line is required Thakkar, 2015-07-29 OpenCV is a famous computer vision library used to analyze and transform copious amounts of image data even in real time and on a mobile device This book focuses on leveraging mobile platforms to build interactive and useful applications The book starts off with an introduction to OpenCV and Android and how they interact with each other using OpenCV s Java API You ll also discover basic image processing techniques such as erosion and dilation of images before walking through how to build more complex applications such as object detection image stitching and face detection As you progress you will be introduced to OpenCV s machine learning framework enabling you to make your applications smarter The book ends with a short chapter covering useful Android tips and tricks and some common errors and solutions that people might face while building an application By the end of the book readers will have gained more expertise in building their own OpenCV projects for the Android platform and integrating OpenCV application programming into existing OpenCV Android Programming By Example Amgad Muhammad, 2015-12-15 Develop vision aware and intelligent projects Android applications with the robust OpenCV library About This Book This is the most up to date book on OpenCV Android programming on the market at the moment There is no direct competition for our title Based on a technology that is increasing in popularity proven by activity in forums related to this topic This book uniquely covers applications such as the Panoramic viewer and Automatic Selfie among others Who This Book Is For If you are an Android developer and want to know how to implement vision aware applications using OpenCV then this book is definitely for you It would be very helpful if you understand the basics of image processing and computer vision but no prior experience is required What You Will Learn Identify and install all the elements needed to start building vision aware Android applications Explore image representation colored and gray scale Recognize and apply convolution operations and filtering to deal with noisy data Use different shape analysis techniques Extract and identify interest points in an image Understand and perform object detection Run native computer vision algorithms and gain performance boosts In Detail Starting from the basics of computer vision and OpenCV well take you all the way to creating exciting applications You will discover that though computer vision is a challenging subject the ideas and algorithms used are simple and intuitive and you will appreciate the abstraction layer that OpenCV uses to do the heavy lifting for you Packed with many examples the book will help you understand the main data structures used within OpenCV and how you can use them to gain performance boosts Next we will discuss and use several image processing algorithms such as histogram equalization filters and color space conversion You then will learn about image gradients and how they are used in many shape analysis techniques such as edge detection Hough Line Transform and Hough Circle Transform In addition to using shape analysis to find things in images you will learn how to describe objects in images in a more robust way using different feature detectors and descriptors By the end of this book you will be able to make intelligent decisions using the famous Adaboost learning algorithm Style and approach An easy to follow tutorial packed with hands on examples Each topic is explained and placed in context and the book supplies full details of the concepts used for added proficiency OpenCV: Computer Vision Projects with Python Joseph Howse, Prateek Joshi, Michael Beyeler, 2016-10-24 Get savvy with OpenCV and actualize cool computer vision applications About This Book Use OpenCV s Python bindings to capture video manipulate images and track objects Learn about the different functions of OpenCV and their actual implementations Develop a series of intermediate to advanced projects using OpenCV and Python Who This Book Is For This learning path is for someone who has a working knowledge of Python and wants to try out OpenCV This Learning Path will take you from a beginner to an expert in computer vision applications using OpenCV OpenCV s application are humongous and this Learning Path is the best resource to get yourself acquainted thoroughly with OpenCV What You Will Learn Install OpenCV and related software such as Python NumPy SciPy OpenNI and SensorKinect all on Windows Mac or Ubuntu Apply curves and other color transformations to simulate the look of old photos movies or video games Apply geometric transformations to images perform image filtering and convert an image into a cartoon like image Recognize hand gestures in real time and perform hand shape analysis based on the output of a Microsoft Kinect sensor Reconstruct a 3D real world scene from 2D camera motion and common camera reprojection techniques Detect and recognize street signs using a cascade classifier and support vector machines SVMs Identify emotional expressions in human faces using convolutional neural networks CNNs and SVMs Strengthen your OpenCV2 skills and learn how to use new OpenCV3 features In Detail OpenCV is a state of art computer vision library that allows a great variety of image and video processing operations

OpenCV for Python enables us to run computer vision algorithms in real time This learning path proposes to teach the following topics First we will learn how to get started with OpenCV and OpenCV3 s Python API and develop a computer vision application that tracks body parts Then we will build amazing intermediate level computer vision applications such as making an object disappear from an image identifying different shapes reconstructing a 3D map from images and building an augmented reality application Finally well move to more advanced projects such as hand gesture recognition tracking visually salient objects as well as recognizing traffic signs and emotions on faces using support vector machines and multi layer perceptrons respectively This Learning Path combines some of the best that Packt has to offer in one complete curated package It includes content from the following Packt products OpenCV Computer Vision with Python by Joseph Howse OpenCV with Python By Example by Prateek Joshi OpenCV with Python Blueprints by Michael Beyeler Style and approach This course aims to create a smooth learning path that will teach you how to get started with will learn how to get started with OpenCV and OpenCV 3 s Python API and develop superb computer vision applications Through this comprehensive course you ll learn to create computer vision applications from scratch to finish and more Learning OpenCV 4 Computer Vision with Python 3 Joseph Howse, Joe Minichino, 2020-02-20 Updated for OpenCV 4 and Python 3 this book covers the latest on depth cameras 3D tracking augmented reality and deep neural networks helping you solve real world computer vision problems with practical code Key Features Build powerful computer vision applications in concise code with OpenCV 4 and Python 3 Learn the fundamental concepts of image processing object classification and 2D and 3D tracking Train use and understand machine learning models such as Support Vector Machines SVMs and neural networks Book Description Computer vision is a rapidly evolving science encompassing diverse applications and techniques This book will not only help those who are getting started with computer vision but also experts in the domain You ll be able to put theory into practice by building apps with OpenCV 4 and Python 3 You ll start by understanding OpenCV 4 and how to set it up with Python 3 on various platforms Next you ll learn how to perform basic operations such as reading writing manipulating and displaying still images videos and camera feeds From taking you through image processing video analysis and depth estimation and segmentation to helping you gain practice by building a GUI app this book ensures you ll have opportunities for hands on activities Next you ll tackle two popular challenges face detection and face recognition You ll also learn about object classification and machine learning concepts which will enable you to create and use object detectors and classifiers and even track objects in movies or video camera feed Later you ll develop your skills in 3D tracking and augmented reality Finally you ll cover ANNs and DNNs learning how to develop apps for recognizing handwritten digits and classifying a person s gender and age By the end of this book you ll have the skills you need to execute real world computer vision projects What you will learn Install and familiarize yourself with OpenCV 4 s Python 3 bindings Understand image processing and video analysis basics Use a depth camera to distinguish foreground and background regions Detect and identify objects and track

their motion in videos Train and use your own models to match images and classify objects Detect and recognize faces and classify their gender and age Build an augmented reality application to track an image in 3D Work with machine learning models including SVMs artificial neural networks ANNs and deep neural networks DNNs Who this book is for If you are interested in learning computer vision machine learning and OpenCV in the context of practical real world applications then this book is for you This OpenCV book will also be useful for anyone getting started with computer vision as well as experts who want to stay up to date with OpenCV 4 and Python 3 Although no prior knowledge of image processing computer vision or machine learning is required familiarity with basic Python programming is a must **OpenCV 3 Blueprints** Joseph Howse, Steven Puttemans, Quan Hua, Utkarsh Sinha, 2015-11-10 Expand your knowledge of computer vision by building amazing projects with OpenCV 3 About This Book Build computer vision projects to capture high quality image data detect and track objects process the actions of humans or animals and much more Discover practical and interesting innovations in computer vision while building atop a mature open source library OpenCV 3 Familiarize yourself with multiple approaches and theories wherever critical decisions need to be made Who This Book Is For This book is ideal for you if you aspire to build computer vision systems that are smarter faster more complex and more practical than the competition This is an advanced book intended for those who already have some experience in setting up an OpenCV development environment and building applications with OpenCV You should be comfortable with computer vision concepts object oriented programming graphics programming IDEs and the command line What You Will Learn Select and configure camera systems to see invisible light fast motion and distant objects Build a camera trap as used by nature photographers and process photos to create beautiful effects Develop a facial expression recognition system with various feature extraction techniques and machine learning methods Build a panorama Android application using the OpenCV stitching module in C with NDK support Optimize your object detection model make it rotation invariant and apply scene specific constraints to make it faster and more robust Create a person identification and registration system based on biometric properties of that person such as their fingerprint iris and face Fuse data from videos and gyroscopes to stabilize videos shot from your mobile phone and create hyperlapse style videos In Detail Computer vision is becoming accessible to a large audience of software developers who can leverage mature libraries such as OpenCV However as they move beyond their first experiments in computer vision developers may struggle to ensure that their solutions are sufficiently well optimized well trained robust and adaptive in real world conditions With sufficient knowledge of OpenCV these developers will have enough confidence to go about creating projects in the field of computer vision This book will help you tackle increasingly challenging computer vision problems that you may face in your careers It makes use of OpenCV 3 to work around some interesting projects Inside these pages you will find practical and innovative approaches that are battle tested in the authors industry experience and research Each chapter covers the theory and practice of multiple complementary approaches so that you will be able to choose wisely in your future

projects You will also gain insights into the architecture and algorithms that underpin OpenCV s functionality We begin by taking a critical look at inputs in order to decide which kinds of light cameras lenses and image formats are best suited to a given purpose We proceed to consider the finer aspects of computational photography as we build an automated camera to assist nature photographers You will gain a deep understanding of some of the most widely applicable and reliable techniques in object detection feature selection tracking and even biometric recognition We will also build Android projects in which we explore the complexities of camera motion first in panoramic image stitching and then in video stabilization By the end of the book you will have a much richer understanding of imaging motion machine learning and the architecture of computer vision libraries and applications Style and approach This book covers a combination of theory and practice We examine blueprints for specific projects and discuss the principles behind these blueprints in detail Computer Vision with Python Cookbook Aleksei Spizhevoi, Aleksandr Rybnikov, 2018-03-23 OpenCV 3 is a native cross platform library for computer vision machine learning and image processing OpenCV s convenient high level APIs hide very powerful internals designed for computational efficiency that can take advantage of multicore and GPU processing This book will help you tackle increasingly challenging computer vision problems The Official Raspberry Pi Projects Book Volume 2 The Makers of The MagPi magazine, 2016-11-01 The Official Raspberry Pi projects book returns with inspirational projects detailed step by step guides and product reviews based around the phenomenon that is the Raspberry Pi See why educators and makers adore the credit card sized computer that can be used to make robots retro games consoles and even art In this volume of The Official Raspberry Pi Projects Book you ll Get involved with the amazing and very active Raspberry Pi community Be inspired by incredible projects made by other people Learn how to make with your Raspberry Pi with our tutorials Find out about the top kits and accessories for your Pi projects And much much more If this is your first time using a Raspberry Pi you ll also find some very helpful guides to get you started with your Raspberry Pi journey With millions of Raspberry Pi boards out in the wild that s millions more people getting into digital making and turning their dreams into a Pi powered reality Being so spoilt for choice though means that we ve managed to compile an incredible list of projects guides and reviews for you This book was written using an earlier version of Raspberry Pi OS Please use Raspberry Pi OS Legacy for full compatibility See magpi cc legacy for more information **Learning OpenCV 4 Computer Vision with Python** Joseph Howse, Joe Minichino, 2020-02-20 Updated for OpenCV 4 and Python 3 this book covers the latest on depth cameras 3D tracking augmented reality and deep neural networks helping you solve real world computer vision problems with practical code Key Features Build powerful computer vision applications in concise code with OpenCV 4 and Python 3 Learn the fundamental concepts of image processing object classification and 2D and 3D tracking Train use and understand machine learning models such as Support Vector Machines SVMs and neural networks Book Description Computer vision is a rapidly evolving science encompassing diverse applications and techniques This book will not only help those who are getting started with computer vision but also experts in the domain You ll be able to put theory into practice by building apps with OpenCV 4 and Python 3 You ll start by understanding OpenCV 4 and how to set it up with Python 3 on various platforms Next you ll learn how to perform basic operations such as reading writing manipulating and displaying still images videos and camera feeds From taking you through image processing video analysis and depth estimation and segmentation to helping you gain practice by building a GUI app this book ensures you ll have opportunities for hands on activities Next you ll tackle two popular challenges face detection and face recognition You ll also learn about object classification and machine learning concepts which will enable you to create and use object detectors and classifiers and even track objects in movies or video camera feed Later you ll develop your skills in 3D tracking and augmented reality Finally you ll cover ANNs and DNNs learning how to develop apps for recognizing handwritten digits and classifying a person s gender and age By the end of this book you ll have the skills you need to execute real world computer vision projects What you will learn Install and familiarize yourself with OpenCV 4 s Python 3 bindings Understand image processing and video analysis basics Use a depth camera to distinguish foreground and background regions Detect and identify objects and track their motion in videos Train and use your own models to match images and classify objects Detect and recognize faces and classify their gender and age Build an augmented reality application to track an image in 3D Work with machine learning models including SVMs artificial neural networks ANNs and deep neural networks DNNs Who this book is for If you are interested in learning computer vision machine learning and OpenCV in the context of practical real world applications then this book is for you This OpenCV book will also be useful for anyone getting started with computer vision as well as experts who want to stay up to date with OpenCV 4 and Python 3 Although no prior knowledge of image processing computer vision or machine learning is required familiarity with basic Python programming is a must Learning OpenCV 3 Computer Vision with Python Joe Minichino, 2015 Unleash the power of computer vision with Python using OpenCVAbout This Book Create impressive applications with OpenCV and Python Familiarize yourself with advanced machine learning concepts Harness the power of computer vision with this easy to follow guideWho This Book Is ForIntended for novices to the world of OpenCV and computer vision as well as OpenCV veterans that want to learn about what s new in OpenCV 3 this book is useful as a reference for experts and a training manual for beginners or for anybody who wants to familiarize themselves with the concepts of object classification and detection in simple and understandable terms Basic knowledge about Python and programming concepts is required although the book has an easy learning curve both from a theoretical and coding point of view What You Will Learn Install and familiarize yourself with OpenCV 3 s Python API Grasp the basics of image processing and video analysis Identify and recognize objects in images and videos Detect and recognize faces using OpenCV Train and use your own object classifiers Learn about machine learning concepts in a computer vision context Work with artificial neural networks using OpenCV Develop your own computer vision real life applicationIn DetailOpenCV 3 is a state of the art

computer vision library that allows a great variety of image and video processing operations Some of the more spectacular and futuristic features such as face recognition or object tracking are easily achievable with OpenCV 3 Learning the basic concepts behind computer vision algorithms models and OpenCV s API will enable the development of all sorts of real world applications including security and surveillance Starting with basic image processing operations the book will take you through to advanced computer vision concepts Computer vision is a rapidly evolving science whose applications in the real world are exploding so this book will appeal to computer vision novices as well as experts of the subject wanting to learn the brand new OpenCV 3 0 0 You will build a theoretical foundation of image processing and video analysis and progress to the concepts of classification through machine learning acquiring the technical know how that will allow you to create and use object detectors and classifiers and even track objects in movies or video camera feeds Finally the journey will end in the world of artificial neural networks along with the development of a hand written digits recognition application Style and approachThis book is a comprehensive guide to the brand new OpenCV 3 with Python to develop real life computer vision OpenCV: Computer Vision Projects with Python Joseph Howse, Prateek Joshi, Michael Beyeler, 2016-10-24 Get applications savvy with OpenCV and actualize cool computer vision applications About This Book Use OpenCV s Python bindings to capture video manipulate images and track objects Learn about the different functions of OpenCV and their actual implementations Develop a series of intermediate to advanced projects using OpenCV and PythonWho This Book Is ForThis learning path is for someone who has a working knowledge of Python and wants to try out OpenCV This Learning Path will take you from a beginner to an expert in computer vision applications using OpenCV OpenCV s application are humongous and this Learning Path is the best resource to get yourself acquainted thoroughly with OpenCV What You Will Learn Install OpenCV and related software such as Python NumPy SciPy OpenNI and SensorKinect all on Windows Mac or Ubuntu Apply curves and other color transformations to simulate the look of old photos movies or video games Apply geometric transformations to image perform image filtering and convert an image into a cartoon like image Recognize hand gestures in real time and perform hand shape analysis based on the output of a Microsoft Kinect sensor Reconstruct a 3D real world scene from 2D camera motion and common camera reprojection techniques Detect and recognize street signs using a cascade classifier and support vector machines SVMs Identify emotional expressions in human faces using convolutional neural networks CNNs and SVMs Strengthen your OpenCV2 skills and learn how to use new OpenCV3 featuresIn DetailOpenCV is a state of art computer vision library that allows a great variety of image and video processing operations OpenCV for Python enables us to run computer vision algorithms in real time This learning path proposes to teach the following topics First we will learn how to get started with OpenCV and OpenCV3 s Python API and develop a computer vision application that tracks body parts Then we will build amazing intermediate level computer vision applications such as making an object disappear from an image identifying different shapes reconstructing a 3D map from images and building an augmented reality application Finally we ll move to more advanced projects such as hand gesture recognition tracking visually salient objects as well as recognizing traffic signs and emotions on faces using support vector machines and multi layer perceptrons respectively This Learning Path combines some of the best that Packt has to offer in one complete curated package It includes content from the following Packt products OpenCV Computer Vision with Python by Joseph Howse OpenCV with Python By Example by Prateek Joshi OpenCV with Python Blueprints by Michael BeyelerStyle and approachThis course aims to create a smooth learning path that will teach you how to get started with will learn how to get started with OpenCV and OpenCV 3 s Python API and develop superb computer vision applications Through this comprehensive course you ll learn to create computer vision applications from scratch to finish and more \*\*Mastering Opencv Android Application Programming\* Nisarg Thakkar, Salil Kapur, Vinjn Zhang, 2015-07-29 If you are a Java and Android developer looking to enhance your skills by learning the latest features of OpenCV Android application programming then this book is for you

Advanced Android Application Development Joseph Annuzzi Jr., Lauren Darcey, Shane Conder, 2014-11-11 Advanced AndroidTM Application Development Fourth Edition is the definitive guide to building robust commercial grade Android apps Systematically revised and updated this guide brings together powerful advanced techniques for the entire app development cycle including design coding testing debugging and distribution With the addition of guizzes and exercises in every chapter it is ideal for both professional and classroom use An outstanding practical reference for the newest Android APIs this guide provides in depth explanations of code utilizing key API features and includes downloadable sample apps for nearly every chapter Together they provide a solid foundation for any modern app project Throughout the authors draw on decades of in the trenches experience as professional mobile developers to provide tips and best practices for highly efficient development They show you how to break through traditional app boundaries with optional features including the Android NDK Google Analytics and Android Wear APIs and Google Play Game Services New coverage in this edition includes Integrating Google Cloud Messaging into your apps Utilizing the new Google location and Google Maps Android APIs Leveraging in app billing from Google Play as well as third party providers Getting started with the Android Studio IDE Localizing language and using Google Play App Translation services Extending your app's reach with Lockscreen widgets and DayDreams Leveraging improvements to Notification Web SMS and other APIs Annuzzi has released new source code samples for use with Android Studio The code updates are posted to the associated blog site http advancedandroidbook blogspot com This title is an indispensable resource for intermediate to advanced level Java programmers who are now developing for Android and for seasoned mobile developers who want to make the most of the new Android platform and hardware This revamped newly titled edition is a complete update of AndroidTM Wireless Application Development Volume II Advanced Topics Third Edition

**Introduction to Android Application Development** Joseph Annuzzi Jr., Lauren Darcey, Shane Conder, 2013-11-21 Bonus KitKat material is available for download at www informit com title 9780321940261 What Every AndroidTM App

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