

how can i retrieve deleted location history on android

How Can I Retrieve Deleted Location History on Android? A Detailed Guide

how can i retrieve deleted location history on android is a question many Android users find themselves asking after accidentally erasing their valuable location data or simply wanting to review past movements that have disappeared. Location history can provide useful insights into your daily routines, trips, and even help in personal safety situations. Losing this data can feel frustrating, but thankfully, there are several approaches you can take to recover deleted location history on your Android device.

In this article, we'll explore practical methods to retrieve lost location history, delve into the tools and settings involved, and share tips to avoid losing such data in the future. Whether you're tech-savvy or a casual user, you'll find helpful advice on how to handle this common issue.

Understanding Location History on Android

Before diving into recovery methods, it's important to understand what location history on Android entails and where it is stored. Android devices typically track your location through Google's Location History service, which records where your device has been while location tracking is enabled. This data is often saved in your Google Account and can be accessed via Google Maps Timeline.

What Is Google Location History?

Google Location History is a feature that stores your device's movements over time, creating a timeline of places you've visited. It helps improve Google services, personalize recommendations, and can be viewed anytime through your Google Maps app or the Google Maps Timeline website. The data includes timestamps, routes, and often the mode of travel.

Where Is Location History Stored?

Most location history data is saved in the cloud, linked to your Google Account. This means even if you delete it from your device, it might still be accessible online unless you specifically erase it from your Google Account settings. Understanding this distinction is key when trying to recover deleted location history on Android.

How Can I Retrieve Deleted Location History on Android?

Recovering deleted location history isn't always straightforward, but depending on how and where it was deleted, there are several strategies you can try.

1. Check Google Maps Timeline

Sometimes, location history appears deleted on the device but remains intact online.

- Open Google Maps on your Android phone.
- Tap the profile icon (top right corner).
- Select "Your Timeline."
- Review the dates to see if your location history is still available.

If the data is there, it means it wasn't permanently deleted and can be restored.

2. Restore Deleted Data via Google Account Activity

Google keeps a record of your activity, including location data, which can be accessed or restored if not permanently deleted.

- Visit Google's My Activity page (myactivity.google.com).
- Sign in with your Google Account credentials.
- Navigate to "Location History."
- Check if your location data is still listed.

If the activity exists, you can export or note the location history details.

3. Use Backup Services

If you regularly back up your phone using Google Backup or third-party apps, there's a chance your location history was included in those backups.

- Go to Settings > Google > Backup.
- Check the last backup date.
- Restore your device from a backup that's dated before the deletion.

Note that restoring a backup will revert your device to the state it was in on that date, so use this method cautiously.

4. Explore Third-Party Data Recovery Apps

There are several Android data recovery tools designed to retrieve deleted files, including location data, from your device's internal memory or SD card. Popular apps include Dr.Fone, Tenorshare UltData, and iMobie PhoneRescue.

While these apps can sometimes recover deleted data, success with location history specifically may vary because location information is often stored in cloud services rather than local files.

Preventing Future Loss of Location History

Understanding how to retrieve deleted location history on Android is just part of the equation. Taking steps to safeguard your data can save you trouble later.

Enable Automatic Backups

Make sure Google Backup is enabled on your device.

- Go to Settings > Google > Backup.
- Turn on "Back up to Google Drive."
- Ensure "App data" and "Device settings" are included.

This ensures your location settings and data are regularly saved.

Manage Location History Settings

Control your location history preferences carefully.

- Open Google Maps.
- Tap your profile picture > Settings > Personal content.
- Locate "Location History" and verify it's enabled.
- Set appropriate privacy controls.

Periodically review and export your location data if you want to keep personal archives.

Use Google Takeout to Export Data

Google Takeout allows you to download your location history and other account data.

- Visit takeout.google.com.
- Select “Location History” from the list.
- Export your data to keep a local copy for future reference.

Having offline copies can protect you against accidental deletion or syncing issues.

Common Reasons Location History Gets Deleted

Knowing what causes deletion can help you prevent it from happening again.

- **Manual deletion:** Users sometimes clear location data to protect privacy or free up space.
- **Account sync issues:** Syncing errors between your device and Google servers might result in data loss.
- **Factory reset:** Resetting your device wipes local data unless backed up.
- **Software updates or bugs:** Occasionally, updates may cause glitches affecting stored data.

Additional Tips for Recovering Location Data

If you find yourself stuck, these pointers might help:

- **Act quickly:** The sooner you attempt recovery, the higher the chance of success.
- **Check multiple Google accounts:** Sometimes location history is linked to a different account.
- **Review app permissions:** Ensure apps that track location have proper permissions enabled.

- **Contact Google Support:** For complicated cases, Google's support team might provide additional assistance.

Retrieving deleted location history on Android can be a bit tricky but is often possible if you explore the right avenues. Whether through Google's cloud services, backups, or recovery tools, there's hope for reclaiming your valuable location data. Taking preventive measures and understanding how location history works will go a long way in keeping your records safe and accessible.

Frequently Asked Questions

Can I recover deleted location history on my Android device?

Yes, you can recover deleted location history on Android if you have a backup, such as a Google account backup or a third-party backup app. Without a backup, recovery is difficult.

How do I check if my location history is backed up on Google?

Go to Google Maps, tap on your profile picture, select 'Your Timeline,' and check if your location data is available there. If you previously enabled Location History, Google may have stored your data.

Is it possible to retrieve deleted location history using a data recovery app?

Some data recovery apps may help recover deleted files, but retrieving location history specifically is challenging because it is stored in system files. Success is not guaranteed.

Can I restore deleted location history from a Google account backup?

If you have a Google account backup that includes Location History, you can restore it by signing into that account and checking your Timeline on Google Maps. Otherwise, restoration is not possible.

Does Google Timeline store deleted location history?

Google Timeline may retain location history unless it has been permanently deleted or if you turned off Location History. Deleted entries might not be recoverable from Timeline.

How can I prevent losing location history data on Android in the future?

Regularly back up your data using Google Backup or third-party apps. Also, keep Location History enabled in your Google account to ensure continuous data saving.

Can I retrieve deleted location history from an Android device without root access?

Retrieving deleted location history without root access is very limited because system data is protected. Rooting your device may increase recovery chances but has risks.

Does Google Takeout allow me to download my location history?

Yes, Google Takeout lets you download your Google data, including Location History, if it hasn't been deleted. This is useful for creating backups or reviewing your data offline.

What should I do immediately after accidentally deleting my location history on Android?

Stop using your device to avoid overwriting data, check for any backups in Google Timeline or Google Drive, and use reliable recovery tools or consult a professional data recovery service.

Additional Resources

[How Can I Retrieve Deleted Location History on Android: A Detailed Exploration](#)

how can i retrieve deleted location history on android is a question that surfaces frequently among smartphone users concerned about privacy, data loss, or simply needing to revisit past travel routes. In an era where smartphones serve not only as communication devices but also as comprehensive life logs, understanding the nuances of location data management becomes essential. This article delves into the technical possibilities, limitations, and best practices for retrieving deleted location history on Android devices, providing a professional and investigative perspective on the subject.

Understanding Location History on Android Devices

Location history on Android is primarily managed through Google Location Services, integrated closely with Google Maps and the user's Google account. When enabled, this service continuously logs the device's geographical coordinates, creating a timeline of movements accessible through Google Maps Timeline. Users rely on this feature for navigation insights, activity documentation, and even security tracking.

However, the storage and deletion of this data hinge on user settings and privacy controls. Location history can be paused, manually deleted, or automatically erased after a set period. Once deleted, the question arises: is it possible to recover this lost information?

How Location History Is Stored and Deleted

Google stores location history in the cloud, linked to the user's Google account rather than solely on the device. This cloud-based storage facilitates synchronization across multiple devices and backups. When a user deletes location history via Google Maps or account settings, the data is removed from the cloud servers, theoretically making it inaccessible.

On the device itself, cached data or local logs may temporarily exist, but these are often overwritten due to Android's storage management protocols. Therefore, the feasibility of retrieving deleted location history depends significantly on how and where the deletion occurred.

Methods to Retrieve Deleted Location History

When exploring how can i retrieve deleted location history on android, it is crucial to analyze practical recovery avenues, along with their pros and cons.

1. Checking Google Account Activity

Before considering complex recovery methods, users should verify their Google Account's Activity Controls. Sometimes, location data is not entirely deleted if only partial history was removed or if auto-delete settings have not been triggered.

- Visit Google's My Activity page (myactivity.google.com)
- Navigate to Location History or Maps Timeline
- Review if any data remains accessible or recoverable

This approach is straightforward and requires no advanced technical steps, but its success depends on whether the deletion was comprehensive.

2. Using Google Takeout for Data Export

Google Takeout allows users to export their entire Google data, including location history archives. If a backup exists or was created prior to deletion, this method can restore some or all location records.

- Access Google Takeout (takeout.google.com)
- Select Location History data for export
- Download and analyze the archive for relevant entries

The advantage here is that Google Takeout provides official, user-friendly access to stored data. The downside is that if location history was deleted before the last backup, retrieval will not be possible.

3. Employing Android Data Recovery Software

Third-party data recovery tools claim to retrieve deleted files, including location data stored on the device. These applications scan internal storage for remnants of deleted data that have not yet been overwritten.

Popular Android recovery tools include:

- Dr.Fone - Data Recovery (Android)
- Tenorshare UltData for Android
- iMobie PhoneRescue for Android

While these tools can be effective for recovering deleted photos, messages, or contacts, their success rate for location history is limited. Location data is often synchronized with cloud services rather than stored solely on the device, making local recovery challenging.

Additionally, users must root their device or enable debugging modes, which carries risks such as voiding warranties or compromising device security.

4. Contacting Google Support

In specific cases involving critical data loss, users may reach out to Google Support to inquire about possible recovery options. However, Google's data privacy policies and automated deletion processes typically prevent recovery of deleted location history once the user initiates deletion.

Technical and Privacy Considerations

The question of how can i retrieve deleted location history on android also intersects with privacy and security concerns. Location data is sensitive, and Android along with Google implements strict measures to ensure user control over this information.

Auto-Deletion and Data Retention Policies

Google offers options to auto-delete location history after 3, 18, or 36 months. This automated process cleans out older data, reducing storage but also limiting long-term retrieval. Users who enable auto-delete should be aware that once data is purged, it is irretrievable.

Local Storage vs. Cloud Storage

Android devices may cache location data locally, but due to limited storage and system optimization, this data is frequently overwritten. Conversely, cloud storage in Google accounts is more persistent but controlled under strict privacy policies. Deleted cloud data is generally unrecoverable, emphasizing the importance of proactive backup strategies.

Legal and Ethical Implications

Attempting to recover deleted location history may raise legal and ethical questions, especially when involving third-party tools or unauthorized access. Users must ensure compliance with privacy laws and respect the confidentiality of location data, particularly when handling information related to others.

Best Practices for Managing Location History on Android

While exploring how can i retrieve deleted location history on android, it becomes evident that prevention and informed management are paramount.

- **Regular Backups:** Utilize Google Takeout or third-party backup services to archive location history periodically.
- **Understand Privacy Settings:** Review and configure Location History settings within Google Account controls to balance convenience and privacy.
- **Enable Offline Caches:** Some apps allow offline access to location data, which may provide secondary records.
- **Avoid Unnecessary Deletions:** Instead of deleting entire history, consider managing data retention periods or pausing location tracking temporarily.

By adopting these measures, users can mitigate the impact of accidental or intentional data deletion and maintain access to valuable location insights.

Emerging Technologies and Future Prospects

Advances in cloud computing, AI-driven data recovery, and improved synchronization protocols may enhance the ability to retrieve deleted location history in the future. Moreover, evolving privacy frameworks could introduce user-friendly recovery options while safeguarding personal data.

Developers and service providers are increasingly aware of user demands for data transparency and control, potentially leading to more robust backup and restoration features integrated directly into Android or Google services.

Navigating the intricacies of location history management on Android reveals a landscape where data availability is balanced against privacy and security imperatives. While recovering deleted location history remains technically challenging and often limited, understanding how Android and Google handle this sensitive information empowers users to make informed decisions regarding their digital footprint.

[How Can I Retrieve Deleted Location History On Android](#)

how can i retrieve deleted location history on android: *Android Security and Ethical Hacking* J. Thomas, Android Security and Ethical Hacking: Basic to Advanced Guide (2025 Edition) by J. Thomas is a comprehensive resource that introduces readers to the fundamentals of Android security and ethical hacking. The book covers mobile operating system architecture, application security, network vulnerabilities, malware analysis, and real-world penetration testing techniques for Android devices. It is carefully designed for ethical hacking learners, cybersecurity students, and professionals aiming to develop defensive strategies and security testing skills for mobile platforms.

how can i retrieve deleted location history on android: Cyber security: A comprehensive perspective Dr. Tejinder Kaur, Rishabh Kumar, 2025-03-26 *The Digital Footprint You Leave Every Day* is a comprehensive guide highlighting how daily technology use can expose personal data. From smartphones and browsing habits to smart devices and social media, it reveals hidden risks lurking in modern life. Seemingly harmless actions—like connecting to open networks or oversharing personal details—can compromise privacy and security. This book examines the ever-evolving cyber threat landscape, delving into insider attacks, vulnerabilities within industrial systems, quantum computing risks, and the role of nation-states in cyber conflicts. Readers learn how human factors, such as cognitive biases and manipulation tactics, enable attackers to bypass sophisticated defenses. The authors also explore innovative forensics methods to uncover digital evidence and identify internal threats often overlooked. Central to its message is empowering readers to safeguard themselves with effective cybersecurity practices, from managing passwords and securing browsers to adopting zero trust models and detecting unconventional malware. Real-world examples, including a foiled two-million-dollar bank heist, underscore both the consequences of inadequate

cybersecurity and the value of ethical hacking. By detailing cutting-edge threats and proven protective measures, this book serves as a crucial resource for anyone wanting to understand and combat modern digital dangers in our interconnected world. It stands as a must-read.

how can i retrieve deleted location history on android: Ethical Hacking & Digital Forensics Aamer Khan, This book Ethical Hacking & Digital Forensics - is for those who desire to learn more about investigating and fighting digital crimes. It covers latest challenges faced in digital forensic like email forensic, mobile forensic and cloud forensic. It also sequentially explains disk forensic, network forensic, memory forensic, mobile forensic and cloud forensic. The lucid content of the book and the questions provided in each chapter help the learners to prepare themselves for digital forensic competitive exams. It covers complete Ethical Hacking with Practicals & Digital Forensics!!

how can i retrieve deleted location history on android: Practical ways to hack Mobile security : Certified Blackhat Abhishek karmakar, Abhishake Banerjee, 2020-06-02 "If you can't beat them, Join them" This book covers all the answer on mobile security threats faced by individuals nowadays, some contents reveal explicit hacking ways which hacker dont reveal, Through this book, you would be able to learn about the security threats on mobile security, some popular social media include Facebook, Instagram & Whats app, latest tools, and techniques, Securing your online privacy, Exploiting wifi technology, how hackers hack into games like Pubg and Freefire and Methodology hackers use. Who should read this book? College students Beginners corporate guys Newbies looking for knowledge Ethical hackers Though this book can be used by anyone, it is however advisable to exercise extreme caution in using it and be sure not to violate the laws existing in that country.

how can i retrieve deleted location history on android: The Violence Against Woman [sic] Act United States. Congress. Senate. Committee on the Judiciary, 2011

how can i retrieve deleted location history on android: Practical Mobile Forensics, Heather Mahalik, Satish Bommisetty, Oleg Skulkin, Rohit Tamma, 2018-01-23 Investigate, analyze, and report iOS, Android, and Windows devices Key Features Get hands-on experience in performing simple to complex mobile forensics techniques. Retrieve and analyze data stored not only on mobile devices but also through the cloud and other connected mediums. A practical guide to leveraging the power of mobile forensics on popular mobile platforms with lots of tips, tricks, and caveats. Book Description Covering up-to-date mobile platforms, this book will focuses on teaching you the most recent techniques for investigating mobile devices. We delve mobile forensics techniques in iOS 9-11, Android 7-8 devices, and Windows 10. We will demonstrate the latest open source and commercial mobile forensics tools, enabling you to analyze and retrieve data effectively. You will learn how to introspect and retrieve data from the cloud, and document and prepare reports of your investigations. By the end of this book, you will have mastered the current operating systems and the relevant techniques to recover data from mobile devices by leveraging open source solutions. What you will learn Discover the new techniques in practical mobile forensics Understand the architecture and security mechanisms present in iOS and Android platforms Identify sensitive files on the iOS and Android platforms Set up a forensic environment Extract data from the iOS and Android platforms Recover data on the iOS and Android platforms Understand the forensics of Windows devices Explore various third-party application techniques and data recovery techniques Who this book is for If you are a forensics professional and are eager to widen your forensics skill set to mobile forensics then, this book is for you. Some understanding of digital forensics practices would do wonders.

how can i retrieve deleted location history on android: Digital Forensics and Incident Response: Investigating and Mitigating Cyber Attacks BAKKIYARAJ KANTHIMATHI MALAMUTHU, Digital Forensics and Incident Response: Investigating and Mitigating Cyber Attacks provides a comprehensive guide to identifying, analyzing, and responding to cyber threats. Covering key concepts in digital forensics, incident detection, evidence collection, and threat mitigation, this book equips readers with practical tools and methodologies used by cybersecurity professionals. It

explores real-world case studies, legal considerations, and best practices for managing security breaches effectively. Whether you're a student, IT professional, or forensic analyst, this book offers a structured approach to strengthening digital defense mechanisms and ensuring organizational resilience against cyber attacks. An essential resource in today's increasingly hostile digital landscape.

how can i retrieve deleted location history on android: Practical Mobile Forensics Satish Bommisetty, Rohit Tamma, Heather Mahalik, 2014-07-21 The book is an easy-to-follow guide with clear instructions on various mobile forensic techniques. The chapters and the topics within are structured for a smooth learning curve, which will swiftly empower you to master mobile forensics. If you are a budding forensic analyst, consultant, engineer, or a forensic professional wanting to expand your skillset, this is the book for you. The book will also be beneficial to those with an interest in mobile forensics or wanting to find data lost on mobile devices. It will be helpful to be familiar with forensics in general but no prior experience is required to follow this book.

how can i retrieve deleted location history on android: Information Technology - New Generations Shahram Latifi, 2018-04-12 This volume presents a collection of peer-reviewed, scientific articles from the 15th International Conference on Information Technology - New Generations, held at Las Vegas. The collection addresses critical areas of Machine Learning, Networking and Wireless Communications, Cybersecurity, Data Mining, Software Engineering, High Performance Computing Architectures, Computer Vision, Health, Bioinformatics, and Education.

how can i retrieve deleted location history on android: Informatics and Intelligent Applications Sanjay Misra, Jonathan Oluranti, Robertas Damaševičius, Rytis Maskeliunas, 2022-01-22 This volume constitutes selected papers presented at the First International Conference on Informatics and Intelligent Applications, ICIIA 2021, held in Ota, Nigeria, in November 2021. The 22 full papers were thoroughly reviewed and selected from 108 submissions. The papers are organized in the following topical sections: AI applications; information security; emerging technologies in informatics.

how can i retrieve deleted location history on android: Forensic Science Notes for Assistant Professor UGC NTA NET Exam Mocktime Publication, 101-01-01 Syllabus: 1. Continental Drift, Plate Tectonics, Endogenetic and Exogenetic forces; Denudation and Weathering. 2. Geomorphic Cycle (Davis and Penck); Theories and Process of Slope Development. 3. Earth Movements (seismicity, folding, faulting and vulcanicity). 4. Landform Occurrence and Causes of Geomorphic Hazards (earthquakes, volcanoes, landslides and avalanches). 5. Composition and Structure of Atmosphere; Insolation, Heat Budget of Earth; Temperature, Pressure and Winds. 6. Atmospheric Circulation (air-masses, fronts and upper air circulation); cyclones and anticyclones (tropical and temperate). 7. Climatic Classification of Koppen & Thornthwaite; ENSO Events (El Nino, La Nina and Southern Oscillations). 8. Meteorological Hazards and Disasters (Cyclones, Thunderstorms, Tornadoes, Hailstorms, Heat and Cold waves, Drought and Cloudburst, Glacial Lake Outburst (GLOF)); Climate Change: Evidences and Causes of Climatic Change in the past; Human impact on Global Climate. 9. Relief of Oceans; Composition: Temperature, Density and Salinity; Circulation: Warm and Cold Currents, Waves, Tides. 10. Sea Level Changes; Hazards: Tsunami and Cyclone. 11. Components: Ecosystem (Geographic Classification) and Human Ecology; Functions: Trophic Levels, Energy Flows, Cycles (geo-chemical, carbon, nitrogen and oxygen), Food Chain, Food Web and Ecological Pyramid. 12. Human Interaction and Impacts; Environmental Ethics and Deep Ecology. 13. Environmental Hazards and Disasters (Global Warming, Urban Heat Island, Atmospheric Pollution, Water Pollution, Land Degradation). 14. National Programmes and Policies: Legal Framework, Environmental Policy; International Treaties, International Programmes and Policies (Brundtland Commission, Kyoto Protocol, Agenda 21, Sustainable Development Goals, Paris Agreement). 15. Population Geography: Sources of population data (census, sample surveys and vital statistics, data reliability and errors); World Population Distribution (measures, patterns and determinants); World Population Growth (prehistoric to modern period). 16. Demographic Transition; Theories of Population Growth (Malthus, Sadler, and Ricardo); Fertility and Mortality

Analysis (indices, determinants and world patterns). 17. Migration (types, causes and consequences and models); Population Composition and Characteristics (age, sex, rural-urban, occupational structure and educational levels); Population Policies in Developed and Developing Countries. 18. Settlement Geography: Rural Settlements (types, patterns and distribution); Contemporary Problems of Rural Settlements (rural-urban migration; land use changes; land acquisition and transactions); Theories of Origin of Towns (Gordon Childe, Henri Pirenne, Lewis Mumford). 19. Characteristics and Processes of Urbanization in Developed and Developing Countries (factors of urban growth, trends of urbanisation, size, structure and functions of urban areas); Urban Systems (the law of the primate city and rank size rule); Central Place Theories (Christaller and Losch). 20. Internal Structure of the City, Models of Urban Land Use (Burgess, Harris and Ullman, and Hoyt); Concepts of Megacities, Global Cities and Edge Cities; Changing Urban Forms (peri-urban areas, rural-urban fringe, suburban, ring and satellite towns); Social Segregation in the City; Urban Social Area Analysis; Manifestation of Poverty in the City (slums, informal sector growth, crime and social exclusion). 21. Economic Geography: Factors affecting spatial organisation of economic activities (primary, secondary, tertiary and quaternary); Natural Resources (classification, distribution and associated problems), Natural Resources Management; World Energy Crises in Developed and Developing Countries. 22. Agricultural Geography: Land capability classification and Land Use Planning; Cropping Pattern: Methods of delineating crop combination regions (Weaver, Doi and Rafiullah), Crop diversification; Von Thunen's Model of Land Use Planning; Measurement and Determinants of Agricultural Productivity, Regional variations in Agricultural Productivity; Agricultural Systems of the World. 23. Industrial Geography: Classification of Industries, Factors of Industrial Location; Theories of Industrial Location (A. Weber, E. M. Hoover, August Losch, A. Pred and D. M. Smith); World Industrial Regions; Impact of Globalisation on manufacturing sector in Less Developed Countries; Tourism Industry; World distribution and growth of Information And Communication Technology (ICT) and Knowledge Production (Education and R & D) Industries. 24. Geography of Transport and Trade: Theories and Models of spatial interaction (Edward Ullman and M. E. Hurst); Measures and Indices of connectivity and accessibility; Spatial Flow Models: Gravity Model and its variants; World Trade Organisation, Globalisation and Liberalisation and World Trade Patterns; Problems and Prospects of Inter and Intra Regional Cooperation and Trade. 25. Regional Development: Typology of Regions, Formal and Fictional Regions, World Regional Disparities; Theories of Regional Development (Albert O. Hirschman, Gunnar Myrdal, John Friedman, Dependency theory of Underdevelopment); Global Economic Blocks; Regional Development and Social Movements in India. 26. Cultural and Social Geography: Concept of Culture, Cultural Complexes, Areas and Region, Cultural Heritage, Cultural Ecology; Cultural Convergence; Social Structure and Processes; Social Well-being and Quality of Life; Social Exclusion. 27. Spatial distribution of social groups in India (Tribe, Caste, Religion and Language); Environment and Human Health, Diseases Ecology, Nutritional Status (etiologicial conditions, classification and spatial and seasonal distributional patterns with special reference to India); Health Care Planning and Policies in India; Medical Tourism in India. 28. Political Geography: Boundaries and Frontiers (with special reference to India); Heartland and Rimland Theories; Trends and Developments in Political Geography; Geography of Federalism. 29. Electoral Reforms in India, Determinants of Electoral Behaviour; Geopolitics of Climate Change; Geopolitics of World Resources; Geo-politics of India Ocean; Regional Organisations of Cooperation (SAARC, ASEAN, OPEC, EU); Neopolitics of World Natural Resources. 30. Contributions of Greek, Roman, Arab, Chinese and Indian Scholars; Contributions of Geographers (Bernhardus Varenius, Immanuel Kant, Alexander von Humboldt, Carl Ritter, Scheafer & Hartshorne); Impact of Darwinian Theory on Geographical Thought. 31. Contemporary trends in Indian Geography: Cartography, Thematic and Methodological contributions; Major Geographic Traditions (Earth Science, manenvironment relationship, area studies and spatial analysis). 32. Dualisms in Geographic Studies (physical vs. human, regional vs. systematic, qualitative vs. quantitative, ideographic vs. nomothetic); Paradigm Shift; Perspectives in Geography (Positivism, Behaviouralism, Humanism, Structuralism, Feminism and Postmodernism).

33. Sources of Geographic Information and Data (spatial and non-spatial); Types of Maps; Techniques of Map Making (Choropleth, Isarithmic, Dasymetric, Chorochromatic, Flow Maps); Data Representation on Maps (Pie diagrams, Bar diagrams and Line Graph). 34. GIS Database (raster and vector data formats and attribute data formats); Functions of GIS (conversion, editing and analysis); Digital Elevation Model (DEM); Georeferencing (coordinate system and map projections and Datum); GIS Applications (thematic cartography, spatial decision support system). 35. Basics of Remote Sensing (Electromagnetic Spectrum, Sensors and Platforms, Resolution and Types, Elements of Air Photo and Satellite Image Interpretation and Photogrammetry); Types of Aerial Photographs; Digital Image Processing: Developments in Remote Sensing Technology and Big Data Sharing and its applications in Natural Resources Management in India; GPS Components (space, ground control and receiver segments) and Applications. 36. Applications of Measures of Central Tendency, Dispersion and Inequalities; Sampling, Sampling Procedure and Hypothesis Testing (chi square test, t test, ANOVA); Time Series Analysis; Correlation and Regression Analysis; Measurement of Indices, Making Indicators Scale Free, Computation of Composite Index; Principal Component Analysis and Cluster Analysis; Morphometric Analysis: Ordering of Streams, Bifurcation Ratio, Drainage Density and Drainage Frequency, Basin Circularity Ratio and Form Factor, Profiles, Slope Analysis, Clinographic Curve, Hypsographic Curve and Altimetric Frequency Graph. 37. Major Physiographic Regions and their Characteristics; Drainage System (Himalayan and Peninsular); Climate: Seasonal Weather Characteristics, Climatic Divisions, Indian Monsoon (mechanism and characteristics), Jet Streams and Himalayan Cryosphere; Types and Distribution of Natural Resources: Soil, Vegetation, Water, Mineral and Marine Resources. 38. Population Characteristics (spatial patterns of distribution), Growth and Composition (rural-urban, age, sex, occupational, educational, ethnic and religious); Determinants of Population; Population Policies in India. 39. Agriculture (Production, Productivity and Yield of Major Food Crops), Major Crop Regions, Regional Variations in Agricultural Development, Environmental, Technological and Institutional Factors affecting Indian Agriculture; Agro-Climatic Zones, Green Revolution, Food Security and Right to Food; Industrial Development since Independence, Industrial Regions and their characteristics, Industrial Policies in India. 40. Development and Patterns of Transport Networks (railways, roadways, waterways, airways and pipelines); Internal and External Trade (trend, composition and directions); Regional Development Planning in India; Globalisation and its impact on Indian Economy; Natural Disasters in India (Earthquake, Drought, Flood, Cyclone, Tsunami, Himalayan Highland Hazards and Disasters).

how can i retrieve deleted location history on android: *Mobile Security Products for Android* Philipp Kratzer, Christoph Gruber, Andreas Clementi, David Lahee, Philippe Rödlach, Peter Stelzhammer, 2014-10-14 We have once again tested security products for smartphones running Google's Android operating system. Our report covers details of the products made by leading manufacturers. Smartphones represent the future of modern communications. In 2013, more than 1 billion smartphones were sold, a further milestone in the advance of these devices¹. A study published by Facebook emphasises the importance of smartphones in our lives; about 80% of users make use of their smartphone within 15 minutes of waking up each day. At the same time, the traditional function of a telephone is becoming less and less important. The high quality of integrated cameras means that the smartphone is increasingly used for photography. As well as with photos, users trust their devices with their most personal communications, such as Facebook, WhatsApp and email. This brings some risks with it, as such usage makes the smartphone interesting for criminals, who attempt to infect the device with malware or steal personal data. There is also the danger brought by phishing attacks. These days, the use of security software on a PC or laptop is seen as essential. However, many smartphone users do not yet have the same sense of responsibility, even though their devices store personal data, private photos, Internet banking information or even company data. As modern smartphones are often expensive to buy, they are also an attractive target for thieves. Top-quality smartphones cost several hundred Euros. As it is not possible to physically prevent them from being stolen, they must be made less attractive to thieves. Consequently, many of today's security products contain not only malware protection, but also

highly developed theft-protection functions, which make the device less attractive to thieves (e.g. by locking the device), and help the owner to find it again.

how can i retrieve deleted location history on android: Data, Engineering and Applications Rajesh Kumar Shukla, Jitendra Agrawal, Sanjeev Sharma, Geetam Singh Tomer, 2019-04-24 This book presents a compilation of current trends, technologies, and challenges in connection with Big Data. Many fields of science and engineering are data-driven, or generate huge amounts of data that are ripe for the picking. There are now more sources of data than ever before, and more means of capturing data. At the same time, the sheer volume and complexity of the data have sparked new developments, where many Big Data problems require new solutions. Given its scope, the book offers a valuable reference guide for all graduate students, researchers, and scientists interested in exploring the potential of Big Data applications.

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techniques while building on your practical knowledge. Toward the end, you will understand the reverse engineering of applications and ways to identify malware. Finally, the book guides you through parsing popular third-party applications, including Facebook and WhatsApp. By the end of this book, you will be proficient in various mobile forensic techniques to analyze and extract data from mobile devices with the help of open source solutions. What you will learnDiscover new data extraction, data recovery, and reverse engineering techniques in mobile forensicsUnderstand iOS, Windows, and Android security mechanismsIdentify sensitive files on every mobile platformExtract data from iOS, Android, and Windows platformsUnderstand malware analysis, reverse engineering, and data analysis of mobile devicesExplore various data recovery techniques on all three mobile platformsWho this book is for This book is for forensic examiners with basic experience in mobile forensics or open source solutions for mobile forensics. Computer security professionals, researchers or anyone looking to gain a deeper understanding of mobile internals will also find this book useful. Some understanding of digital forensic practices will be helpful to grasp the concepts covered in the book more effectively.

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Deep Learning in Cyber Forensics Misra, Sanjay, Arumugam, Chamundeswari, Jaganathan, Suresh, S., Saraswathi, 2020-12-18 Developing a knowledge model helps to formalize the difficult task of analyzing crime incidents in addition to preserving and presenting the digital evidence for legal processing. The use of data analytics techniques to collect evidence assists forensic investigators in following the standard set of forensic procedures, techniques, and methods used for evidence collection and extraction. Varieties of data sources and information can be uniquely identified, physically isolated from the crime scene, protected, stored, and transmitted for investigation using AI techniques. With such large volumes of forensic data being processed, different deep learning techniques may be employed. Confluence of AI, Machine, and Deep Learning in Cyber Forensics contains cutting-edge research on the latest AI techniques being used to design and build solutions that address prevailing issues in cyber forensics and that will support efficient and effective investigations. This book seeks to understand the value of the deep learning algorithm to handle evidence data as well as the usage of neural networks to analyze investigation data. Other themes that are explored include machine learning algorithms that allow machines to interact with the evidence, deep learning algorithms that can handle evidence acquisition and preservation, and techniques in both fields that allow for the analysis of huge amounts of data collected during a forensic investigation. This book is ideally intended for forensics experts, forensic investigators, cyber forensic practitioners, researchers, academicians, and students interested in cyber forensics, computer science and engineering, information technology, and electronics and communication.

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