

A New SVM-STE_G Embedding Model in Steganography

Publisher: IEEE

Cite This



Hanizan Shaker Hussain : Fazali Ghazali : Hafiza A. S. : Hanif Mohd Ali : Anbuselvan Sangodiah : Kante Koli Oumar **All Authors** ...

25 Full Text Views



Alerts

Manage Content Alerts

Add to Citation Alerts

Abstract

Document Sections

- I. Introduction
- II. Related Work
- III. Methodology
- IV. Result
- V. Conclusion



Downl

PDF

Abstract:One of the sub-fields in information security is called information hiding and can be applied to protect data and information nowadays. This is a method in where secret-m... [View more](#)

► Metadata

Abstract:

One of the sub-fields in information security is called information hiding and can be applied to protect data and information nowadays. This is a method where secret-messages are hidden stealthily in an image file. This method has been used in various fields especially in digital image steganography. Most of the techniques proposed to date have various problems i.e., non-random changes will obviously occur especially when the secret message is embedded in an inappropriate area and when the load capacity exceeds the number of bits allowed. This paper proposes a machine learning steganographic method called SVM-Steg model that uses embedding and extracting algorithms by exploiting SVM classification and SVM-Steg embedding to achieve good performance. In addition, the distance of the embedding location is also taken into account so that more pixels can be embedded at more distance locations. The results show a quality cover-image when high peak signal-to-noise ratio (PSNR) values are recorded greater for all types of cover images. In comparison to the other technique, all PSNRs for the proposed technique, SVM-Steg Method achieved 40 or higher. It is not only succeeding in providing a secure embedding position, but also increases the number of secret-bits embedded.

Published in: 2023 IEEE 8th International Conference On Software Engineering and Computer Systems (ICSECS)

Date of Conference: 25-27 August 2023

DOI: 10.1109/ICSECS58457.2023.10256390

☰ Contents

I. Introduction

A technology that hides secret messages in the form of images in other files is called information hiding [1]–[3]. Steganography is the process of hiding a message in a suitable carrier file in which the messages are hidden in an image [15]. The goal of Steganography is to conceal communication [4]. Therefore, the basic requirement of the steganography algorithm is to prevent people from recognizing the messages hidden in the secret document.

Authors	▼
Figures	▼
References	▼
Keywords	▼
Metrics	▼

More Like This

A review of machine learning techniques using decision tree and support vector machine
2016 International Conference on Computing Communication Control and automation (ICCUBEA)
Published: 2016

Support Vector Machine Algorithm in Machine Learning
2022 IEEE International Conference on Artificial Intelligence and Computer Applications (ICAICA)
Published: 2022

Show More

IEEE Personal Account

CHANGE
USERNAME/PASSWORD

Purchase Details

PAYMENT OPTIONS
VIEW PURCHASED
DOCUMENTS

Profile Information

COMMUNICATIONS
PREFERENCES
PROFESSION AND
EDUCATION
TECHNICAL INTERESTS

Need Help?

US & CANADA: +1 800
678 4333
WORLDWIDE: +1 732
981 0060
CONTACT & SUPPORT

Follow



About IEEE *Xplore* | Contact Us | Help | Accessibility | Terms of Use | Nondiscrimination Policy | IEEE Ethics Reporting | Sitemap | IEEE Privacy Policy

A not-for-profit organization, IEEE is the world's largest technical professional organization dedicated to advancing technology for the benefit of humanity.

© Copyright 2024 IEEE - All rights reserved.

IEEE Account

- » Change Username/Password
- » Update Address

Purchase Details

- » Payment Options
- » Order History
- » View Purchased Documents

Profile Information

- » Communications Preferences
 - » Profession and Education
- Loading MathJax/extensions/MathZoom.js

» [Technical Interests](#)

Need Help?

» **US & Canada:** +1 800 678 4333

» **Worldwide:** +1 732 981 0060

» [Contact & Support](#)

[About IEEE Xplore](#) | [Contact Us](#) | [Help](#) | [Accessibility](#) | [Terms of Use](#) | [Nondiscrimination Policy](#) | [Sitemap](#) | [Privacy & Opting Out of Cookies](#)

A not-for-profit organization, IEEE is the world's largest technical professional organization dedicated to advancing technology for the benefit of humanity.

© Copyright 2024 IEEE - All rights reserved. Use of this web site signifies your agreement to the terms and conditions.



< Back to results | 1 of 1

Download Print Save to PDF Add to List Create bibliography

8th International Conference on Software Engineering and Computer Systems, ICSECS 2023 • Pages 336 - 341 • 2023 • 8th IEEE International Conference on Software Engineering and Computer Systems, ICSECS 2023 • Penang • 25 August 2023 through 27 August 2023 • Code 192961

Document type

Conference Paper

Source type

Conference Proceedings

ISBN

979-835031093-1

DOI

10.1109/ICSECS58457.2023.10256390

View more

A New SVM-STEG Embedding Model in Steganography

Hussain, Hanizan Shaker^a ; Ghazali, Fazali^b ; Hafiza A.S.^c ; Ali, Hanif Mohd^b ;

Sangodiah, Anbuselvan^a ; Oumar, Kante Koli^a

Save all to author list

^a Quest International University, Faculty of Computing and Engineering, Malaysia

^b Universiti Islam Antarabangsa Sultan, Abdul Halim mu'Adzam Shah, Kulliyyah of Muamalat & Management Sciences, Malaysia

^c Universiti Poly-Tech Malaysia, Faculty of Computing and Multimedia, Malaysia

Full text options Export

Abstract

Author keywords

Indexed keywords

SciVal Topics

Abstract

One of the sub-fields in information security is called information hiding and can be applied to protect data and information nowadays. This is a method in where secret-messages are hidden stealthily in an image file. This method has been used in various fields especially in digital image steganography. Most of the techniques proposed to date have various problems i.e., non-random changes will obviously occur especially when the secret message is embedded in an inappropriate area and when the load capacity exceeds the number of bits allowed. This paper proposes a machine learning steganographic method called SVM-Steg model that uses embedding and extracting algorithms by exploiting SVM classification and SVM-Steg embedding to achieve good performance. In addition, the distance of the embedding location is also taken into account so that more pixels can be embedded at more distance locations. The results show a quality cover-image when high peak signal-to-noise ratio (PSNR) values are recorded

Cited by 0 documents

Inform me when this document is cited in Scopus:

Set citation alert >

Related documents

Image steganography optimization technique

Mohd, B.J. , Abed, S. , Al-Naami, B.
(2012) *Lecture Notes of the Institute for Computer Sciences, Social-Informatics and Telecommunications Engineering*

FPGA hardware of the LSB steganography method

Mohd, B.J. , Abed, S. , Al-Hayajneh, T.
(2012) *IEEE CITS 2012 - 2012 International Conference on Computer, Information and Telecommunication Systems*

LSB algorithm based on support vector machine in digital image steganography

Hussain, H.S. , Din, R. , Musthapa, A.
(2017) *Journal of Telecommunication, Electronic and Computer Engineering*

View all related documents based on references

Find more related documents in Scopus based on:

Authors > Keywords >

greater for all types of cover images. In comparison to the other technique, all PSNRs for the proposed technique, SVM-Steg Method achieved 40 or higher. It is not only succeeding in providing a secure embedding position, but also increases the number of secret-bits embedded. © 2023 IEEE.

Author keywords

Digital Image Steganography; Information hiding; Machine learning; Secret-messages; Support Vector Machine

Indexed keywords

SciVal Topics 

References (44)

[View in search results format >](#)

☐ All

[Export](#)



[Print](#)



[E-mail](#)



[Save to PDF](#)

[Create bibliography](#)

☐ 1

Sasmal, M., Mula, D.

An enhanced method for information hiding using LSB steganography

(2021) *Journal of Physics: Conference Series*, 1797 (1), art. no. 012015. Cited 4 times.

<http://iopscience.iop.org/journal/1742-6596>

doi: 10.1088/1742-6596/1797/1/012015

[View at Publisher](#)

☐ 2

Nolkha, A., Kumar, S., Dhaka, V.S.

Image Steganography Using LSB Substitution: A Comparative Analysis on Different Color Models

(2020) *Smart Innovation, Systems and Technologies*, 141, pp. 711-718. Cited 10 times.

<http://www.springer.com/series/8767>

ISBN: 978-981138405-9

doi: 10.1007/978-981-13-8406-6_67

[View at Publisher](#)

☐ 3

Mados, B., Balaz, A., Adam, N., Hurtuk, J.

Information hiding into OBJ format file using vector steganography techniques

(2018) *SACI 2018 - IEEE 12th International Symposium on Applied Computational Intelligence and Informatics, Proceedings*, art. no. 8440965, pp. 91-95. Cited 4 times.

<http://ieeexplore.ieee.org/xpl/mostRecentIssue.jsp?punumber=8412770>

ISBN: 978-153864640-3

doi: 10.1109/SACI.2018.8440965

[View at Publisher](#)

☐ 4

Tao, J., Li, S., Zhang, X., Wang, Z.

Towards Robust Image Steganography

(2019) *IEEE Transactions on Circuits and Systems for Video Technology*, 29 (2), art. no. 8533349, pp. 594-600. Cited 125 times.

doi: 10.1109/TCSVT.2018.2881118

[View at Publisher](#)

About Scopus

- What is Scopus
- Content coverage
- Scopus blog
- Scopus API
- Privacy matters

Language

- 日本語版を表示する
- 查看简体中文版本
- 查看繁體中文版本
- Просмотр версии на русском языке

Customer Service

- Help
- Tutorials
- Contact us

ELSEVIER

[Terms and conditions ↗](#) [Privacy policy ↗](#)

All content on this site: Copyright © 2024 Elsevier B.V. ↗, its licensors, and contributors. All rights are reserved, including those for text and data mining, AI training, and similar technologies. For all open access content, the Creative Commons licensing terms apply. We use cookies to help provide and enhance our service and tailor content.By continuing, you agree to the use of cookies ↗.

