

Institutional Sign In

BROWSE

MY SETTINGS

GET HELP

WHAT CAN I ACCESS?

SUBSCRIBE

Advertisement

Browse Journals & Magazines > IEEE Transactions on Communic... > Volume: 32 Issue: 4

Data Compression Using Adaptive Coding and Partial String Matching

Sign In or Purchase
to View Full Text

396
Paper
Citations

38
Patent
Citations

1768
Full
Text Views

Related Articles

The LOCO-I lossless image compression algorithm: principles and standardization ...

Hidden Markov processes

Information-theoretic asymptotics of Bayes methods

View All

2
Author(s)

J. Cleary ; I. Witten

View All Authors

Abstract

Authors

Figures

References

Citations

Keywords

Metrics

Media

Abstract:

The recently developed technique of arithmetic coding, in conjunction with a Markov model of the source, is a powerful method of data compression

in situations where a linear treatment is inappropriate. Adaptive coding allows the model to be constructed dynamically by both encoder and decoder during the course of the transmission, and has been shown to incur a smaller coding overhead than explicit transmission of the model's statistics. But there is a basic conflict between the desire to use high-order Markov models and the need to have them formed quickly as the initial part of the message is sent. This paper describes how the conflict can be resolved with partial string matching, and reports experimental results which show that mixed-case English text can be coded in as little as 2.2 bits/ character with no prior knowledge of the source.

Published in: IEEE Transactions on Communications (Volume: 32, Issue: 4, Apr 1984)

Page(s): 396 - 402

DOI: 10.1109/TCOM.1984.1096090

Date of Publication: Apr 1984

Publisher: IEEE

Print ISSN: 0090-6778

Sponsored by: IEEE Communications Society

Download PDF

Download Citations

View References

Email

Print

Request Permissions

Export to Collabratec

This article is only available in PDF.

Read document

Keywords

IEEE Keywords
Data compression, Adaptive coding, Statistics, Decoding, Arithmetic, Dictionaries, Frequency, Entropy, Huffman coding, Data communication

INSPEC: Non-Controlled Indexing
Data compression, Adaptive coding

Authors

Abstract

Authors

Figures

References

Citations

Keywords

Back to Top

http://ieeexplore.ieee.org/document/1096090/

2/4

J. Cleary
Calgary Univ., Calgary, Alta., Canada

I. Witten

Related Articles

The LOCO-I lossless image compression algorithm: principles and standardization into JPEG-LS
M.J. Weinberger; G. Seroussi; G. Sapiro

Hidden Markov processes
Y. Ephraim; N. Merhav

Information-theoretic asymptotics of Bayes methods
B.S. Clarke; A.R. Barron

Test data compression and test resource partitioning for system-on-a-chip using frequency-directed run-length (FDR) codes
A. Chandra; K. Chakrabarty

Implementing the PPM data compression scheme
A. Moffat

Arithmetic coding for data compression
P.G. Howard; J.S. Vitter

EEG data compression techniques
G. Antoniol; P. Tonella

Integrating error detection into arithmetic coding
C. Boyd; J.G. Cleary; S.A. Irvine; I. Rinsma-Melchert; I.H. Witten

Lossless compression of VQ index with search-order coding
Chaur-Heh Hsieh; Jyi-Chang Tsai

Multiterminal source coding with high resolution
R. Zamir; T. Berger

IEEE Account

- » Change Username/Password
- » Update Address

Purchase Details

- » Payment Options
- » Order History
- » 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

[About IEEE Xplore](#) | [Contact Us](#) | [Help](#) | [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 2017 IEEE - All rights reserved. Use of this web site signifies your agreement to the terms and conditions.