

# }essentials{

Olaf Manz

## Well Packed – Not a Bit Too Much

Compression of Digital Data Explained  
in an Understandable Way



Springer

---

essentials

**Springer essentials**

*Springer essentials* provide up-to-date knowledge in a concentrated form. They aim to deliver the essence of what counts as “state-of-the-art” in the current academic discussion or in practice. With their quick, uncomplicated and comprehensible information, essentials provide:

- an introduction to a current issue within your field of expertise
- an introduction to a new topic of interest
- an insight, in order to be able to join in the discussion on a particular topic

Available in electronic and printed format, the books present expert knowledge from Springer specialist authors in a compact form. They are particularly suitable for use as eBooks on tablet PCs, eBook readers and smartphones. *Springer essentials* form modules of knowledge from the areas economics, social sciences and humanities, technology and natural sciences, as well as from medicine, psychology and health professions, written by renowned Springer-authors across many disciplines.

More information about this subseries at <http://www.springer.com/series/16761>

---

Olaf Manz

# Well Packed – Not a Bit Too Much

Compression of Digital Data  
Explained in an Understandable  
Way

Olaf Manz  
Worms, Germany

ISSN 2197-6708  
essentials

ISSN 2731-3107

Springer essentials

ISBN 978-3-658-34736-9

ISSN 2197-6716 (electronic)

ISSN 2731-3115 (electronic)

ISBN 978-3-658-34737-6 (eBook)

<https://doi.org/10.1007/978-3-658-34737-6>

© Springer Fachmedien Wiesbaden GmbH, part of Springer Nature 2021

This work is subject to copyright. All rights are reserved by the Publisher, whether the whole or part of the material is concerned, specifically the rights of reprinting, reuse of illustrations, recitation, broadcasting, reproduction on microfilms or in any other physical way, and transmission or information storage and retrieval, electronic adaptation, computer software, or by similar or dissimilar methodology now known or hereafter developed.

The use of general descriptive names, registered names, trademarks, service marks, etc. in this publication does not imply, even in the absence of a specific statement, that such names are exempt from the relevant protective laws and regulations and therefore free for general use.

The publisher, the authors and the editors are safe to assume that the advice and information in this book are believed to be true and accurate at the date of publication. Neither the publisher nor the authors or the editors give a warranty, expressed or implied, with respect to the material contained herein or for any errors or omissions that may have been made. The publisher remains neutral with regard to jurisdictional claims in published maps and institutional affiliations.

Responsible Editor: Annika Denkert

This Springer imprint is published by the registered company Springer Fachmedien Wiesbaden GmbH part of Springer Nature.

The registered company address is: Abraham-Lincoln-Str. 46, 65189 Wiesbaden, Germany

---

## What You Can Find in This *essential*

You learn,

- how to digitize information for the purpose of data transmission and storage.
- which different techniques are available to additionally compress digital data.
- how the simplest compression method, run length encoding, works.
- what is entropy coding in data compression.
- that you can also create dictionaries for data compression.
- how to cheat the human eye and ear by means of irrelevance reduction.
- that photos, graphics, videos and sound can only be transmitted and stored in quantized form.