HANSER Specialist Books

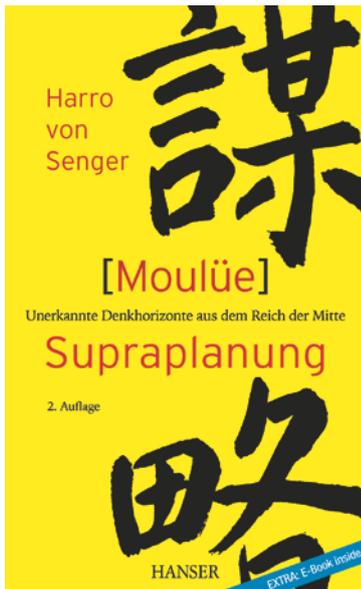# COMPUTER / TECHNOLOGY / SCIENCE

RIGHTS GUIDE

January - June
2018

Contact: Gabriele Josiger · Carl Hanser Verlag · Kolberger Str. 22 · 81679 Munich · GERMANY
T +49-89-998 30-201 · F +49-89-998 30-227 · gabriele.josiger@hanser.de

Supra Planning – Unknown Ways of Thinking from China
Revealing Facts of the Chinese Economic Power
ISBN: 978-3-446-45525-2
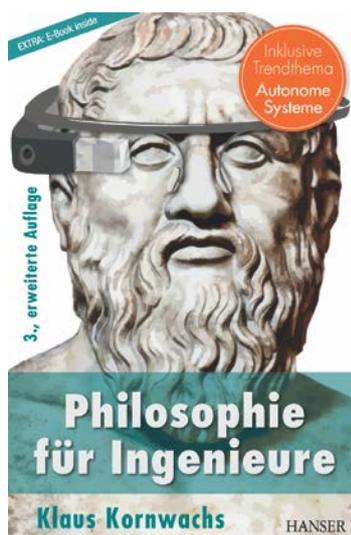300 pages, Hardcover, 2nd edition
Publication date: **May 2018**

Skilled, pragmatic, innovative – that's how we often view the Chinese. But this is only one side of the coin. The other side is not well known in the West: The Chinese, particularly the leadership of this numerous people, make use of three different mental resources, and they use these quite systematically.

Moulüe: We in the West differentiate between a short-term tactic and a long-term strategy. Yet additionally, the Chinese use another dimension of thinking: Supra Planning. It is based on the oldest known military treatise "The Art of War" by Sun Tzu and enables for a panoramic overview of a, for us, unfathomable depth.

Harro von Senger introduces us in this book to the Chinese Ways of thinking, in their interconnections little or entirely unknown at all in the West, and how we can react.

Harro von Senger is a professor of sinology at the Albert-Ludwigs-University in Freiburg im Breisgau and an expert on Chinese law at the Swiss Institute for Comparative Law in Lausanne. Since 2001 he has been an instructor at the School of the General Staff of the Swiss Army. The author is widely published in matters of law and in Chinese specific journals. He is known to a large audience through the book "**Stratagems**", first published in 2003, now in the 12th edition and translated in 12 languages.

Philosophy for Engineers
3rd edition

ISBN: 978-3-446-45471-2
216 pages, Hardcover
Publication date: **April 2018**

Why doesn't anybody understand operating instructions? Why is it such a pain to get a train ticket out of a ticket dispenser of the German Railways? How come we can try out so much more than we can know? Why must we be so careful when performing a simulation? We want to simplify things, but how?

These are some of the questions that technology philosopher **Klaus Kornwachs** addresses in his book. He is very familiar and comfortable in the world of the approximately 700,000 engineers in Germany and is well acquainted with the daily problems that have their origin in technological innovations that drive the economic engine of Germany. Kornwachs writes in "**Philosophy for Engineers**" about inventions, technical processes and design flaws. He also refers to the philosophy behind the technology and how the logic of Aristotle contributed to the design of turbines. The author provides the epistemology of practical problems, spanning the range of thoughts from Plato to Richard Sennet. This is a very entertaining have-to read for every engineer.

In the third edition the author added his thoughts about the current mega trends of technology, for instance:
Singularity – Victory of Technology or just a Miserable Theology?
The Mess with the Diesel Engine – Why Technology Should Be More Transparent
Autonomous Systems and Big Data – Is That the Future of the Art of Engineering?

Fundamentals of Design
Electronics – Electrical Engineering – Precision Engineering – Mechatronics
10th edition

ISBN: 978-3-446-45470-5
330 pages, paperback
Publication date: **February 2018**

Design – The Reference Book with Unbeatable Value

This book provides students in technical schools and colleges the fundamentals of electronics, electrical engineering, precision engineering and mechatronics for the design of products. The text is comprised in a catalog-like fashion and has many illustrations; this is very helpful to the engineer in the field.

From the contents:
- Basic rules of design, including tolerances and fits
- Strength of materials, strength analysis, material characteristics
- Electrical line connecters
- Machine elements, such as springs, rods, axes, bearings, guides, clutches and transmissions

An appendix about drafting provides the pertinent rules and regulations about generating drafts such as lay-out, depiction of bodies, format of individual parts, sections, rules for dimensioning and representation of special elements. Additionally, the text shows the drafting rules and lay-outs of electrical diagrams and the identification of important electronic elements.

All standards have been updated in the new edition of the book such as the description of surface roughness, tolerances and fits and spur gear transmissions in precision engineering.

Professor Werner Krause was director of the Institute of Precision Engineering and taught design of precision engineering for many years.
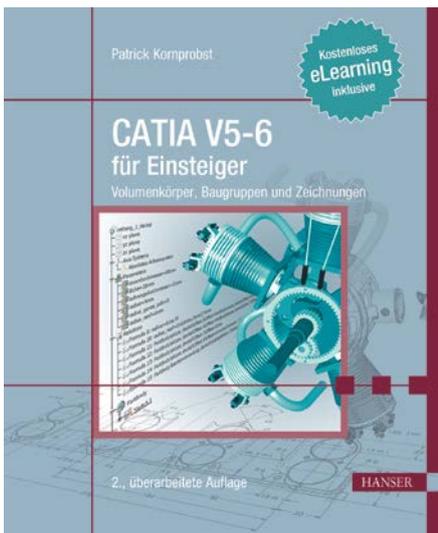
CATIA V5-6 for Starters
Volume of Components, Subassamblies and Drawings
Includes free E-Learning
2nd edition

ISBN: 978-3-446-45532-0
410 pages, paperback, full color
Publication date: **July 2018**

Get Ready for Designing with CATIA V5-6 (includes E-Learning)

This practical, compact and graphic book will get you ready for designing with CATIA V5-6. It uses the included multi-media E-learning feature. The book has been written for students and newcomers from the areas mechanical engineering, aerospace and automobile engineering. It is also well suited for self-study and test preparation.

Patrick Kornprobst bases the material on CATIA V5-6R2016 and in the introduction shows what methodical designing is all about. The text starts with an overview of the user interface and the most pertinent core functionalities. Next, you will learn all the important design steps, from producing an individual part design, to assembly design to drafting. Advanced topics such as parametrics, formula allocation, knowledge based design, power copies and link management round out the content.

The latest edition contains new items such as scene generation in component design, additional exercises to Boolean operations and parametric/knowledgeware.

All topics are explained with the help of exercises with varying degrees of difficulty; this way you can pace the speed of your learning. The exemplary models of the exercises can be found on the Internet. The purchase of the book also provides access to an E-Learning platform that contains, among other material:

- Interactive video tutorials
- Additional exercise material for all degrees of difficulty
- Learning objective control steps and graduation certificate

Patrick Kornprobst is the CEO of the CORTEG AG and a faculty for product development at the University Munich. Since 1995 he is working as a coach, trainer and leading CAD-developer for projects in the automobile and aerospace industries. This experience allowed him to acquire an impressive vision of the world of CAD.

Open Robots for Makers
Programming Fun and Smart Electronics with Makeblock

ISBN: 978-3-446-45489-7
350 pages, paperback, full color
Publication date: **June 2018**

DIY- Build and Program Robots with Makeblock

Have you already played around with LEGO® MINDSTORMS® and itch for a robotic set with unending freedom in terms of programming and mechanics? Makeblock robots will deliver and then some. This book will tell you all you need to know to build and program a robot just as you envision it with the use of smart software and electronics of the Makeblock product world.

This book will tell you:
- The mechanical and electronic knowledge that is necessary to control your digital friend: all there is about motors, sensors, LEDs, power supply and more.
- How to create and execute programs in the visual environment mBlock (Scratch or Arduino Modus) to control the robot.
- How to use Makeblock sensors and the embedded functions of the cloud-computing-platform Microsoft Azure to endow the robot with senses to recognize language, light, obstacles and more.
- How to control your robot remotely via Bluetooth or your smartphone.

It will take no time to build the robot that does what you want it to do; the text offers a project for every level, from easy to sophisticated.
This book is for you if you are aching to realize your own ideas. It will give you the skills to build your very own robot with Makeblock software and hardware, just like a real developer!

Erik Bartmann is a software and database developer, author of "Discover the World of Electronics with Arduino" and many other publications.
Jörn Donges has a PhD in physics, is a free-lance editor and author of the Hanser book "Make Something with Arduino!"

#makers DO IT.

A-A

Stephan Regele

Mach was
mit
3D-Druck!

Entwickle, drucke und baue
deine DIY-Objekte

EXTRA
E-Book inside

HANSER

Make Something with 3D Printing
Develop, Print and Build your Own DIY Objects

ISBN: 978-3-446-44781-3
300 pages, Paperback, full color
Publication date: **May 2018**

Have you already used 3D patterns? Are you itching to make 3D objects yourself? Then you know that to realize a good idea it takes more than merely operating a 3D printer. This book will teach you the skills that will make a real inventor out of you. You will learn what it takes to turn an idea into a product. It progresses from creating a model to printing the individual parts to assembling the DIY object.

Stefan Regele teaches you:
- The software needed to generate the 3D model for your DIY object
- What to look for when selecting and maintaining a 3D printer
- The settings of the printer, such as speed, temperature, layer thickness
- Mastering the challenges of 3D printing, such as bulging, bridges, warping etc.
- The most suitable printing materials
- How best to bond plastics and how to combine these with wood, metal and electronics components.

The text presents more than 15 examples to give you ideas for original 3D printed creations, such as a fly trap, a Hamburger press, a ventilator, a vase or even a printed violin. On the website of the book: the STEP and SLT data of all examples in the book can be downloaded to work with the CAD models and to generate the print data.

This book is for you if you are inspired to realize your very own product ideas with the help of 3D printing. It will provide a host of ideas to give wings to your creativity plus all the required skills to develop, print and build the object of your desire.

Stephan Regele owns an engineering business and is forever tinkering with product ideas that can be realized by way of 3D printing.
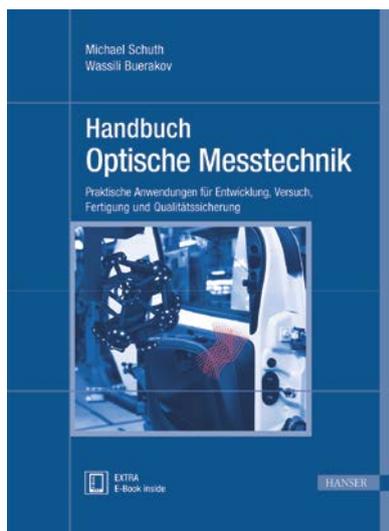
Handbook of Optical Metrology
Practical Applications for Development, Test, Manufacturing And Quality Assurance

ISBN: 978-3-446-43634-3
1st edition
736 pages, Hardcover, full color
Publication date: **September 2017**

This book shows the enormous breadth of applications of optical metrology in the industry. In each phase of a fabrication process optical metrology allows to get the desired result faster, safer and more economically. For each production step an applicable optical measurement method can be found that is often the better alternative to the non-optical method. This book provides an overview of the most important measurement processes, combined with a range of actual application examples stemming from the portfolio of 40 companies of the photonic industries. Some of these examples are:

- 3D-data acquisition for component measurement and optimization, digitization, inspection and quality testing
- Temperature measurement for the detection of leaks and for the surveillance of fabrication processes
- Oscillation and motion analysis for the control of vibrations
- Surface analysis for roughness measurement
- Damage detection for the prevention of component failure, for instance in automotive, energy, and aerospace technology and in mechanical engineering in general
- Deformation metrology to evaluate load distributions during operation

Additionally, the authors provide the required basic knowledge about standardization and occupational safety; plus, the reader will find knowledge about physical principles and optical components of measurement instruments.

Michael Schuth is a professor of mechanical engineering at the University for Applied Sciences (UAS) in Trier and teaches at the Departments for Equipment Engineering, De-
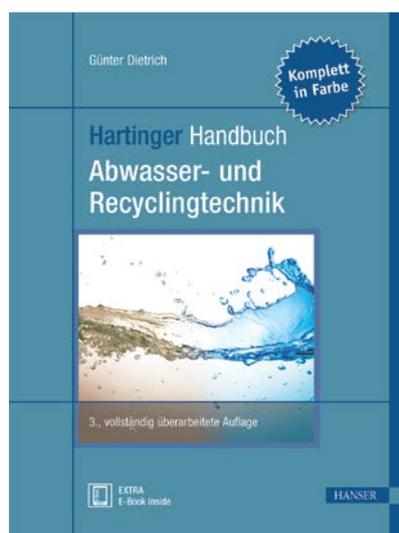
Recycling

Handbook Wastewater and Recycling Technology

ISBN: 978-3-446-43170-6
3rd completely revised edition
715 pages, Hardcover, full color
Publication date: **October 2017**

Dietrich Hartinger's "Handbook Wastewater and Recycling Technology" is a newly updated edition of the classic.

The 3rd edition has been completely revised under consideration of all important developments of the last 26 years. Seven authors collaborated with a new publisher to update many items and to add new subjects and practical experiences:
- New equipment, technologies and processes for waste water treatment
- Electrical technology for industrial waste water treatment plants with control engineering, communication systems and maintenance
- A detailed introduction of the math of the process calculation that is indispensable for precise plant engineering
- Precise instructions for the selection of required processes, dimensioning of the equipment and the organization of the plant's controlling software
- The updated laws and regulations according to the EU law.

Well proven content, such as chemical basics and principal operating modes of the individual components and equipment, will remain a core component of the text and will be augmented with practical information about interconnections and decision criteria. The book will help the reader to develop economical solutions even for complex installations. It is an essential reference for every planner and operator of industrial waste water installations.

Günter Dietrich is a degreed engineer. He worked until 2014 as the lead engineer for the Bosch Solar Energy AG in Arnstadt.

Training to Become a Programmer
Contains more than 120 Workouts in Java and Python

ISBN: 978-3-446-45486-6
574 pages, Paperback
Publication date: **March 2018**

The Programming Regimen for All Who Want to Go Further

This workbook will help you to become a better programmer with the aid of entertaining and practical assignments. Each chapter starts with a short warm-up of the programming concept in question. The application of this concept can be practiced with many workout tasks. The regimen begins with simple jobs and advances to more complex ones. In order to keep it fun and interesting, 100 practical exercises are interspersed. For instance, you will learn to program a BMI calculator, a PIN generator or how to display the time of day using an analog timepiece.

In case you do not steadily advance, each workout offers hints to the solutions. The commented solutions are available in Java and Python. The course uses tool Processing in order to present an uncluttered training environment for elementary programming concepts. The text describes the installation and use of the tool.

Professor Luigi Lo Iacono teaches Computer Science at the Faculty for Information, Media and Electronics at the TH Cologne.
Stephan Wiefling is a scientific contributor at the same school.
Michael Schneider works in software development at Siemens.

The focus of the research and development efforts of the authors lies in the area of distributed applications based on web technologies and their security.
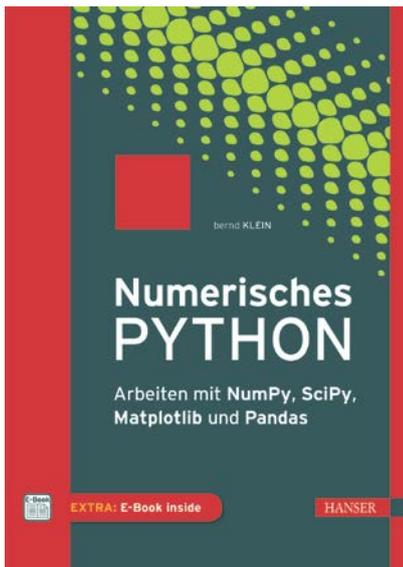
Numerical Python
Get Going with NumPy, SciPy, Matplotlib and Pandas
ISBN: 978-3-446-45076-9
225 pages, Hardcover
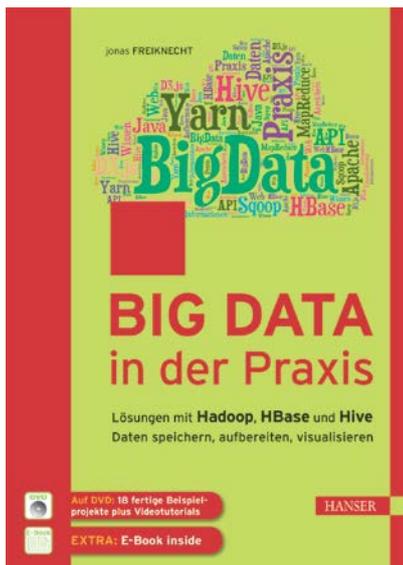Publication date: **June 2018**

This book is very relevant for engineers and scientists who work with large amounts of data and possibly have to put them into a visual form.

- For processing and visualizing large amounts of data
- Python, a substitute for the expensive MATLAB
- Only book of this kind on the market
- Includes a mini introduction to Python

For these jobs MATHLAB is often used.

Many companies and institutes strive to replace MATHLAB, mostly because of its high cost, with Python, which is free of charge and has no license restrictions. But knowing Python alone is not enough; the book imparts knowledge about the extensive modules "Numpy", "Pandas" and "Matplotlib".

Bernd Klein is a degreed computer scientist, founder and owner of the internationally operating training establishment "Bodenseo". He knows the ins and outs of theory and practice of programming languages. His classes benefit from experiences he gained when he was working on multiple projects in the industry. In the last four years *Bernd Klein* specialized on Python and became an internationally recognized expert in this field. He demonstrates his teaching skills and competence on the website www.python-course.eu, also available in German under www.python-kurs.eu.

Big Data in Practice, 2nd Edition

Solutions with Hadoop, Spark, HBase and Hive.
Data – Storing, Preparing and Visualizing
ISBN: 978-3-446-43959-7
500 pages, Hardcover
Publication date: June 2018

This completely revised edition will familiarize you with the subject Big Data in a very practical way. You will learn technologies, tools and methods, develop exemplary solutions and find out how to prepare existing systems in anticipation of the immanent challenges of Big Data.

The text will first familiarize you with the well known Apache Projects such as Hadoop, Hive and HBase and some less known frameworks such as Apache UIMA or Apache OpenNlP. This will prep you to process unstructured data. All software components are free of charge and available in the Internet.

The authors guide you step by step first to build small projects and end up with a complete and functioning implementation. It is the book's objective to open your eyes for new possibilities. You can demonstrate these to your colleagues and show them the benefit and added value of your data.

The second edition includes many subjects such as Apache Spark, Apache Kafka and other technologies that are united in their objective to keep response times short and allow interactive operations. The topics Data Governance and Security, so important for many companies, are also addressed. On the Internet: 18 complete example projects based on Hadoop, HBase, Hive and D3.js plus video tutorials.

Jonas Freiknecht works at the REWE Systems GmbH and is involved with consolidating, processing and evaluating large amounts of data. On the side, he is getting his Ph.D. at the University Mannheim about Visualization and Simulation. He also publishes, in print and on the internet, about various IT- subjects.

Stefan Papp is a preacher of the ways how the study of data will change the world in the coming decades. He is working with companies to redefine their use of data and utilize Big Data technologies to create new business models. The author also teaches at universities, works as a Hadoop trainer and is a speaker at professional conferences.

Developing Games with Unreal Engine 4
Programming with Blueprints: Basics & Advanced Techniques. With an Introduction to Virtual Reality
2nd edition
ISBN: 978-3-446-45290-9
512 pages, Hardcover, **full color**
Publication date: **November 2017**

You will find a step by step introduction to game development.

This could be your introduction to the world of game development with Unreal Engine 4. You will learn exhaustively to work with Engine, visual programming with Blueprints and many other aspects of game development. You will realize that all that you can imagine you will be able to apply. The second edition of the book has added features and examples to subjects such as Landscape, Multiplayer, Static Mesh and Widget. It also includes an exhaustive chapter about the development of Virtual Reality Apps by Benedikt Engelhard.

Contents:
Part I: Introduction to the Unreal interface and Blueprint programming including fundamentals of programming (Bool, Integer, Float, If, Array, Actors …).
Part II: Al important Unreal and Blueprint techniques such as objects in 3D, control (with keyboard / mouse / touch pad), physics, audio, light and shade, particles, landscapes, whiteboxing, Unreal's own databases, animations and more.
Part III: More complex techniques such as network, debugging, optimization for performance, KI and packaging for desktop, console, Web and mobile devices.
Part IV: Development of a complete game, incorporating the mentioned techniques and of a VR game.

The text is interspersed with many small examples and tasks to help you to apply and evaluate the learned material. On the website of the book you fill find games, their project data and video tutorials.

Jonas Richartz is a game designer; he graduated from the Games Academy in Frankfurt as Game Designer and Game Programmer. On his YouTube channel Jonas Richartz regularly puts out tutorials about Unreal 4.
Benedikt Engelhard is a VR Entrepreneur and shares his know-how in an exhaustive chapter on Virtual Reality with the Unreal Engine 4.

Developing Virtual Reality Games with Unity 3D
Fundamentals, Example Projects, Tips & Tricks

ISBN: 978-3-446-45147-6
480 pages, Hardcover, **full color**
Publication date: **December 2017**

You, too, can develop your own virtual reality game with Unity; this book will show you how.

This practical guide offers a well founded introduction into the development of virtual reality worlds. It covers VR- and Unity fundamentals, goes into advanced Unity programming and gives complete example projects for various VR headsets and the prerequisite know-how for your own VR app. The guide includes platforms such as Oculus Rift, SteamVR (e.g. HTC Vive), GearVR and GoogleVR (e.g. Daydream), among others.

The following subjects are covered:
- Introduction into virtual reality, the supported VR headsets and the most important functions of the Unity Engine.
- The chapter "Quickstart" provides an introduction into the fundamentals of 3D development with Unity and serves as the foundation of the ensuing chapters.
- Do's and Don'ts for the development if VR games are explained using practical examples. Most of the examples can easily be replicated.
- You will get a deep insight into Unity, its internal VR support plus the various VR development tools for VR headsets such as Oculus Rift, HTC Vive, Gear VR and Daydream, among others.
- Finally, the text provides an exemplary project for each headset that allows you to apply your newly acquired knowledge. You will also learn how to publish, promote and present your game.

The book concludes with tips on how to find ideas for your projects and with tricks for game development. All project examples are available online for download.
Daniel Korgel has his own business as a software developer. He is an expert in the area of virtual reality.

Applied Image Processing and Image Analysis
Methods, Concepts and Algorithms in Opto-Technology, Optical Metrology and Industrial Quality Control

ISBN: 978-3-446-44933-6
300 pages, Paperback
Publication date: **February 2018**

Fundamentals of Applied Image Processing

Image processing and image analysis is an important aspect in many industrial processes, for instance quality control, material testing, analysis of geographic and mineral structures, the development of modern CCD or CMOS cameras and generally for control and automation of processes.

This textbook covers the basic methods, concepts and algorithms. With the help of basic knowledge in math the text examines image transformations in terms of their effect; the results of image analysis are meticulously compared in terms of the expected precision. Special attention is paid to the implementation of the algorithms and the evaluation of the expected processing speed. The textbook also earns its name with the inclusion of many easy-to-follow examples plus assignments along with their solutions. The text contains some algorithms as source code; this enables the reader to apply own methods and to write code.

The book addresses students of electronics, particularly in the fields of automation and mechatronics, computer science, material technology and optical technology. It also seeks to be relevant to developers of image processing systems and engineers who deal with these systems in an industrial context.

Professor **Joachim Ohser** teaches at the University of Darmstadt at the graduate programs Optical Technology and Image Processing.
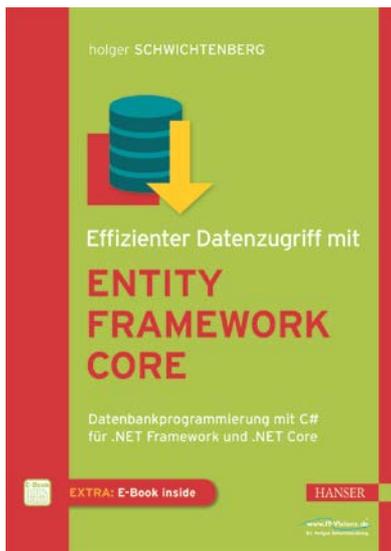
Efficient Data Access with Entity Framework Core

Database Programming with C# for .NET Framework and .NET Core

ISBN: 978-3-446-44898-8

320 pages, Hardcover

Publication date: **December 2017**

Quick and easy data access with Entity Framework Core

This book shows you how to quickly access various databases with the completely updated version of Microsoft's O/R-Mapper. Take advantage of the product that has greater speed, needs less computer memory and is platform independent.

Get a deeper knowledge of Entity Framework Core

This book covers both, to use existing data bases, also known as reverse engineering, and how to generate data bases layouts based on object models, also known as forward engineering. With Entity Framework Core, the reader learns the fundamentals plus:

- How to drastically reduce the programming efforts for data access code
- How to optimize the performance of your applications
- How to write mobile apps
- How to integrate older versions.

The text is written for software developers who have experience with .NET, particularly C#, ADO.NET, LINQ, and relational data bases and who now want to use Entity Framework Core to generate data access code.

Holger Schwichtenberg, PhD, is one of Germany's best known experts for programming with Microsoft.NET. He is one of the experts of www.IT-Visions.de, a company teaches and supports enterprises of any size. He contributes to various trade publications including heise.de; he has also published many text books. Holger Schwichtenberg has been endowed with the title "Most Valuable Professional" (MVP) by Microsoft.