
A Functional Start To Computing With Python Chapman Hallcrc Textbooks In Computing

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CASSANDRA

Functional Programming in Scala

Prentice Hall

A student-friendly text, A Concise Introduction to Data Structures Using Java takes a developmental approach, starting with simpler concepts first and then building toward greater complexity. Important topics, such as linked lists, are introduced gradually and revisited with increasing depth. More code and guidance are provided at the beginning, allowing students time to adapt to Java while also beginning to learn data structures. As students develop fluency in Java, less code is provided and more algorithms are outlined in pseudocode. The text

is designed to support a second course in computer science with an emphasis on elementary data structures. The clear, concise explanations encourage students to read and engage with the material, while partial implementations of most data structures give instructors the flexibility to develop some methods as examples and assign others as exercises. The book also supplies an introductory chapter on Java basics that allows students who are unfamiliar with Java to quickly get up to speed. The book helps students become familiar with how to use, design, implement, and analyze data structures, an important step on the

path to becoming skilled software developers.

What Every Business Student Needs to Know, Second Edition

Lulu Press, Inc
Written by ten leading experts in the field, *Optical Computing* cover topics such as optical bistability, optical interconnects and circuits, photorefractive devices, spatial light modulators, associative memory, and optical computer architectures.

Real World OCaml

Simon and Schuster
Agda is an advanced programming language based on Type Theory. Agda's type system is expressive enough to support full functional verification of programs, in two styles. In external verification, we write

pure functional programs and then write proofs of properties about them. The proofs are separate external artifacts, typically using structural induction. In internal verification, we specify properties of programs through rich types for the programs themselves. This often necessitates including proofs inside code, to show the type checker that the specified properties hold. The power to prove properties of programs in these two styles is a profound addition to the practice of programming, giving programmers the power to guarantee the absence of bugs, and thus improve the quality of software more than previously possible. Verified

Functional Programming in Agda is the first book to provide a systematic exposition of external and internal verification in Agda, suitable for undergraduate students of Computer Science. No familiarity with functional programming or computer-checked proofs is presupposed. The book begins with an introduction to functional programming through familiar examples like booleans, natural numbers, and lists, and techniques for external verification. Internal verification is considered through the examples of vectors, binary search trees, and Braun trees. More advanced material on type-level computation, explicit

reasoning about termination, and normalization by evaluation is also included. The book also includes a medium-sized case study on Huffman encoding and decoding.

4th Summer School, CEFP 2011, Budapest, Hungary, June 14-24, 2011, Revised Selected Papers CRC Press

A Functional Start to Computing with Python enables students to quickly learn computing without having to use loops, variables, and object abstractions at the start. Requiring no prior programming experience, the book draws on Python's flexible data types and operations as well as its capacity for defining new functions. Along with the specifics of Python, the text covers

important concepts of computing, including software engineering motivation, algorithms behind syntax rules, advanced functional programming ideas, and, briefly, finite state machines. Taking a student-friendly, interactive approach to teach computing, the book addresses more difficult concepts and abstractions later in the text. The author presents ample explanations of data types, operators, and expressions. He also describes comprehensions—the powerful specifications of lists and dictionaries—before introducing loops and variables. This approach helps students better understand assignment syntax and iteration by giving them a mental

model of sophisticated data first. Web Resource The book's supplementary website at <http://functionalfirstpython.com/> provides many ancillaries, including: Interactive flashcards on Python language elements Links to extra support for each chapter Unit testing and programming exercises An interactive Python stepper tool Chapter-by-chapter points Material for lectures [The Compiler Design Handbook](#) MIT Press This book presents fundamental contributions to computer science as written and recounted by those who made the contributions themselves. As such, it is a highly original approach to a OC living historyOCO of the field

of computer science. The scope of the book is broad in that it covers all aspects of computer science, going from the theory of computation, the theory of programming, and the theory of computer system performance, all the way to computer hardware and to major numerical applications of computers.

An Introduction to Computer Science and Python

Programming CRC Press

In *OCaml from the Very Beginning* John Whittington takes a no-prerequisites approach to teaching a modern general-purpose programming language. Each small, self-contained chapter introduces a new topic, building until the

reader can write quite substantial programs. There are plenty of questions and, crucially, worked answers and hints. *OCaml from the Very Beginning* will appeal both to new programmers, and experienced programmers eager to explore functional languages such as OCaml. It is suitable both for formal use within an undergraduate or graduate curriculum, and for the interested amateur.

A Concise Introduction to Data Structures using Java CRC Press

Praise for the first edition: "The well-written, comprehensive book...[is] aiming to become a de facto reference for the language and its features and

capabilities. The pace is appropriate for beginners; programming concepts are introduced progressively through a range of examples and then used as tools for building applications in various domains, including sophisticated data structures and algorithms...Highly recommended. Students of all levels, faculty, and professionals/practitioners. —D. Papamichail, University of Miami in CHOICE Magazine Mark Lewis' Introduction to the Art of Programming Using Scala was the first textbook to use Scala for introductory CS courses. Fully revised and expanded, the new edition of this popular text has been divided into two books. Introduction to

Programming and Problem-Solving Using Scala is designed to be used in first semester college classrooms to teach students beginning programming with Scala. The book focuses on the key topics students need to know in an introductory course, while also highlighting the features that make Scala a great programming language to learn. The book is filled with end-of-chapter projects and exercises, and the authors have also posted a number of different supplements on the book website. Video lectures for each chapter in the book are also available on YouTube. The videos show construction of code from the ground up and this type of

"live coding" is invaluable for learning to program, as it allows students into the mind of a more experienced programmer, where they can see the thought processes associated with the development of the code. About the Authors Mark Lewis is a Professor at Trinity University. He teaches a number of different courses, spanning from first semester introductory courses to advanced seminars. His research interests included simulations and modeling, programming languages, and numerical modeling of rings around planets with nearby moons. Lisa Lacher is an Assistant Professor at the University of Houston, Clear Lake with over 25 years of

professional software development experience. She teaches a number of different courses spanning from first semester introductory courses to graduate level courses. Her research interests include Computer Science Education, Agile Software Development, Human Computer Interaction and Usability Engineering, as well as Measurement and Empirical Software Engineering. *Object-Oriented, Abstraction, and Data Structures Using Scala, Second Edition* CRC Press
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features and capabilities. The pace is appropriate for beginners; programming concepts are introduced progressively through a range of examples and then used as tools for building applications in various domains, including sophisticated data structures and algorithms...Highly recommended. Students of all levels, faculty, and professionals/practitioners.? —D. Papamichail, University of Miami in CHOICE Magazine ? Mark Lewis'?Introduction to the Art of Programming Using Scala?was the first textbook to use Scala for introductory CS courses. Fully revised and expanded, the new edition of this popular text has been

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code from the ground up and this type of "live coding" is invaluable for learning to program, as it allows students into the mind of a more experienced programmer, where they can see the thought processes associated with the development of the code. About the Authors Mark Lewis is a Professor at Trinity University. He teaches a number of different courses, spanning from first semester introductory courses to advanced seminars. His research interests included simulations and modeling, programming languages, and numerical modeling of rings around planets with nearby moons.? Lisa Lacher is an Assistant Professor at the University of

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Information Systems

CRC Press
Summary Functional Programming in JavaScript teaches JavaScript developers functional techniques that will improve extensibility, modularity, reusability,

testability, and performance. Through concrete examples and jargon-free explanations, this book teaches you how to apply functional programming to real-life development tasks. Purchase of the print book includes a free eBook in PDF, Kindle, and ePub formats from Manning Publications. About the Technology In complex web applications, the low-level details of your JavaScript code can obscure the workings of the system as a whole. As a coding style, functional programming (FP) promotes loosely coupled relationships among the components of your application, making the big picture easier to design, communicate, and maintain. About

the Book Functional Programming in JavaScript teaches you techniques to improve your web applications - their extensibility, modularity, reusability, and testability, as well as their performance. This easy-to-read book uses concrete examples and clear explanations to show you how to use functional programming in real life. If you're new to functional programming, you'll appreciate this guide's many insightful comparisons to imperative or object-oriented programming that help you understand functional design. By the end, you'll think about application design in a fresh new way, and you may even grow to appreciate monads!

What's Inside High-value FP techniques for real-world uses Using FP where it makes the most sense Separating the logic of your system from implementation details FP-style error handling, testing, and debugging All code samples use JavaScript ES6 (ES 2015) About the Reader Written for developers with a solid grasp of JavaScript fundamentals and web application design. About the Author Luis Atencio is a software engineer and architect building enterprise applications in Java, PHP, and JavaScript.

Table of Contents PART 1 THINK FUNCTIONALLY Becoming functional Higher-order JavaScript PART 2 GET FUNCTIONAL Few data structures, many

operations Toward modular, reusable code Design patterns against complexity PART 3 ENHANCING YOUR FUNCTIONAL SKILLS Bulletproofing your code Functional optimizations Managing asynchronous events and data *Introduction to Programming and Problem-Solving Using Scala, Second Edition* Cambridge University Press

The papers in this book were presented at a research workshop on "New Computing Environments : Parallel, Vector, and Systolic" which was held at Stanford University on November 7-9, 1984, under the sponsorship of the Army Research Office with the assistance and

cooperation of the Department of Computer Science. The workshop's content was determined by the attempt to survey, as much as possible, work accomplished in real computing environments which involve a heavy degree of parallelism, and still to take account of some potential new developments in computer architectures and their prospective influence on algorithms and software.

Parallel, Vector and Systolic CRC Press

Coverage in this proceedings volume includes DNA and string processing applications, reconfigurable computing hardware and systems, image processing, run-time behavior, instruction set extension, as well

as random number generation and financial computation. Computer Systems Architecture Packt Publishing Ltd Through examples and analogies, Computational Thinking for the Modern Problem Solver introduces computational thinking as part of an introductory computing course and shows how computer science concepts are applicable to other fields. It keeps the material accessible and relevant to noncomputer science majors. With numerous color figures, this classroom-tested book focuses on both foundational computer science concepts and engineering topics. It covers abstraction, algorithms, logic,

graph theory, social issues of software, and numeric modeling as well as execution control, problem-solving strategies, testing, and data encoding and organizing. The text also discusses fundamental concepts of programming, including variables and assignment, sequential execution, selection, repetition, control abstraction, data organization, and concurrency. The authors present the algorithms using language-independent notation.

Pro Functional PHP

Programming Apress

"Havill's problem-driven approach introduces algorithmic concepts in context and motivates students with a wide range of interests and

backgrounds." -- Janet Davis, Associate Professor and Microsoft Chair of Computer Science, Whitman College "This book looks really great and takes exactly the approach I think should be used for a CS 1 course. I think it really fills a need in the textbook landscape." -- Marie desJardins, Dean of the College of Organizational, Computational, and Information Sciences, Simmons University "Discovering Computer Science is a refreshing departure from introductory programming texts, offering students a much more sincere introduction to the breadth and complexity of this ever-growing field." -- James Deverick, Senior Lecturer, The College

of William and Mary
"This unique
introduction to the
science of computing
guides students
through broad and
universal approaches
to problem solving in a
variety of contexts and
their ultimate
implementation as
computer programs." --
Daniel Kaplan, DeWitt
Wallace Professor,
Macalester College
Discovering Computer
Science:
Interdisciplinary
Problems, Principles,
and Python
Programming is a
problem-oriented
introduction to
computational problem
solving and
programming in
Python, appropriate for
a first course for
computer science
majors, a more
targeted disciplinary
computing course or,

at a slower pace, any
introductory computer
science course for a
general audience.
Realizing that an
organization around
language features only
resonates with a
narrow audience, this
textbook instead
connects programming
to students' prior
interests using a range
of authentic problems
from the natural and
social sciences and the
digital humanities. The
presentation begins
with an introduction to
the problem-solving
process,
contextualizing
programming as an
essential component.
Then, as the book
progresses, each
chapter guides
students through
solutions to
increasingly complex
problems, using a
spiral approach to

introduce Python language features. The text also places programming in the context of fundamental computer science principles, such as abstraction, efficiency, testing, and algorithmic techniques, offering glimpses of topics that are traditionally put off until later courses. This book contains 30 well-developed independent projects that encourage students to explore questions across disciplinary boundaries, over 750 homework exercises, and 300 integrated reflection questions engage students in problem solving and active reading. The accompanying website — <https://www.discoverin gcs.net> — includes more advanced

content, solutions to selected exercises, sample code and data files, and pointers for further exploration. Computer Science and Software Engineering CRC Press
This title gives students an integrated and rigorous picture of applied computer science, as it comes to play in the construction of a simple yet powerful computer system. *Classical Problems/contemporar y Issues* CRC Press
This fast-moving tutorial introduces you to OCaml, an industrial-strength programming language designed for expressiveness, safety, and speed. Through the book's many examples, you'll quickly learn how OCaml stands out as a

tool for writing fast, succinct, and readable systems code. Real World OCaml takes you through the concepts of the language at a brisk pace, and then helps you explore the tools and techniques that make OCaml an effective and practical tool. In the book's third section, you'll delve deep into the details of the compiler toolchain and OCaml's simple and efficient runtime system. Learn the foundations of the language, such as higher-order functions, algebraic data types, and modules Explore advanced features such as functors, first-class modules, and objects Leverage Core, a comprehensive general-purpose standard library for OCaml Design effective and reusable libraries,

making the most of OCaml's approach to abstraction and modularity Tackle practical programming problems from command-line parsing to asynchronous network programming Examine profiling and interactive debugging techniques with tools such as GNU gdb *Functional Programming in JavaScript* CRC Press Teach Your Students How to Use Computing to Explore Powerful and Creative Ideas In the twenty-first century, computers have become indispensable in music making, distribution, performance, and consumption. Making Music with Computers: Creative Programming in Python introduces important concepts and skills necessary to

generate music with computers. It interweaves computing pedagogy with musical concepts and creative activities, showing students how to integrate the creativity and design of the arts with the mathematical rigor and formality of computer science. The book provides an introduction to creative software development in the Python programming language. It uses innovative music-creation activities to illustrate introductory computer programming concepts, including data types, algorithms, operators, iteration, lists, functions, and classes. The authors also cover GUIs, event-driven programming, big data, sonification, MIDI programming,

client-server programming, recursion, fractals, and complex system dynamics. Requiring minimal musical or programming experience, the text is designed for courses in introductory computer science and computing in the arts. It helps students learn computer programming in a creative context and understand how to build computer music applications. Also suitable for self-study, the book shows musicians and digital music enthusiasts how to write music software and create algorithmic music compositions. Web Resource A supplementary website (<http://jythonMusic.org>) provides a music library and other software resources

used in the text. The music library is an extension of the jMusic library and incorporates other cross-platform programming tools. The website also offers example course and associated media resources.

Discover the power of functional programming, generator functions, lazy evaluation, the built-in itertools library, and monads, 2nd Edition Morgan & Claypool

A Functional Start to Computing with Python enables students to quickly learn computing without having to use loops, variables, and object abstractions at the start. Requiring no prior programming experience, the book draws on Python's

flexible data types and operations as well as its capacity for defining new functions. Along with the specifics of Python, the text covers important concepts of computing, including software engineering motivation, algorithms behind syntax rules, advanced functional programming ideas, and, briefly, finite state machines. Taking a student-friendly, interactive approach to teach computing, the book addresses more difficult concepts and abstractions later in the text. The author presents ample explanations of data types, operators, and expressions. He also describes comprehensions—the powerful specifications of lists and dictionaries—before introducing loops and

variables. This approach helps students better understand assignment syntax and iteration by giving them a mental model of sophisticated data first. Web Resource The book's supplementary website at <http://functionalfirstpython.com/> provides many ancillaries, including: Interactive flashcards on Python language elements Links to extra support for each chapter Unit testing and programming exercises An interactive Python stepper tool Chapter-by-chapter points Material for lectures

Functional programming for the masses CRC Press

A Beginner's Guide to Computer Programming Start Programming Using

HTML, CSS, and JavaScript is a manual for undergraduate students in engineering and the natural sciences to discover how computer programming works. Using a dialog format between two students and a professor, the text teaches students how the mainstream web languages HTML, CSS, and JavaScript interact and how to harness their capabilities in practical settings. Each chapter focuses on a specific theme supported by a gradual development of engaging worked examples of live web documents and applications using the three languages. Students can follow most of the examples and experiments using any modern browser and plain text editor. A

practical homework problem is included at the end of every chapter and then is discussed at the beginning of the next chapter. In addition, a related keywords list helps students review key topics. By focusing on important established principles and concrete examples, this introductory book shows students how to write cleaner and more easily maintainable code. It augments the basic language syntax and rules with contents and structure while keeping the material simple and manageable.

[An Introduction to Programming and Computing](#) Springer
Create succinct and expressive implementations with functional

programming in Python
Key Features Learn how to choose between imperative and functional approaches based on expressiveness, clarity, and performance Get familiar with complex concepts such as monads, concurrency, and immutability Apply functional Python to common Exploratory Data Analysis (EDA) programming problems
Book Description If you're a Python developer who wants to discover how to take the power of functional programming (FP) and bring it into your own programs, then this book is essential for you, even if you know next to nothing about the paradigm. Starting with a general overview of functional concepts, you'll explore common

functional features such as first-class and higher-order functions, pure functions, and more. You'll see how these are accomplished in Python 3.6 to give you the core foundations you'll build upon. After that, you'll discover common functional optimizations for Python to help your apps reach even higher speeds. You'll learn FP concepts such as lazy evaluation using Python's generator functions and expressions. Moving forward, you'll learn to design and implement decorators to create composite functions. You'll also explore data preparation techniques and data exploration in depth, and see how the Python standard library fits the functional programming model.

Finally, to top off your journey into the world of functional Python, you'll at look at the PyMonad project and some larger examples to put everything into perspective. What you will learn Use Python's generator functions and generator expressions to work with collections in a non-strict (or lazy) manner Utilize Python library modules including itertools, functools, multiprocessing, and concurrent features to ensure efficient functional programs Use Python strings with object-oriented suffix notation and prefix notation Avoid stateful classes with families of tuples Design and implement decorators to create composite functions Use functions such as max(), min(),

map(), filter(), and sorted() Write higher-order functions Who this book is for This book is for Python developers who would like to perform Functional programming with Python. Python Programming knowledge is assumed. A First Guide to Numerical Concepts and Programming Methods CRC Press Today's embedded devices and sensor networks are becoming more and more sophisticated, requiring more efficient and highly flexible compilers. Engineers are discovering that many of the compilers in use today are ill-suited to meet the demands of more advanced computer architectures. Updated to include the latest

techniques, The Compiler Design Handbook, Second Edition offers a unique opportunity for designers and researchers to update their knowledge, refine their skills, and prepare for emerging innovations. The completely revised handbook includes 14 new chapters addressing topics such as worst case execution time estimation, garbage collection, and energy aware compilation. The editors take special care to consider the growing proliferation of embedded devices, as well as the need for efficient techniques to debug faulty code. New contributors provide additional insight to chapters on register allocation, software pipelining, instruction

scheduling, and type systems. Written by top researchers and designers from around the world, The Compiler Design Handbook, Second

Edition gives designers the opportunity to incorporate and develop innovative techniques for optimization and code generation.