Data Science From Scratch First Principles With Python

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this is a first principles based practical introduction to the fundamentals of data science aimed at the mathematically comfortable reader with some programming skills the book covers the important parts of python to know the important parts of math probability statistics to know the basics of data science how commonly used data science techniques work learning by

implementing them what is map reduce and how to do it in python other applications such as nlp network analysis and more

you know how to write python now master the computer science that makes it work if you ve been programming for a while you may have found yourself wondering about the deeper principles behind the code how are programming languages implemented what does an interpreter really do how does the microprocessor execute instructions at a fundamental level how does a machine learning algorithm make decisions computer science from scratch is for experienced python programmers who want to fill in those gaps not through abstract lectures but through carefully designed projects that bring core cs concepts to life understanding these fundamental building blocks will make you a more versatile and effective programmer each chapter presents a focused hands on project that teaches a fundamental idea in computer science interpreters understand syntax parsing and evaluation by writing a basic interpreter emulators learn computer architecture by building an nes emulator from the ground up graphics explore image manipulation and algorithmic art through computer graphics projects machine learning demystify classification by implementing a simple readable knn model these projects aren t about building tools they re structured lessons that use code to reveal how computing works each chapter concludes with real world context thoughtful extensions and exercises to deepen your understanding authored by david kopec a computer science professor and author of the popular classic computer science problems series this is not a beginner s book and it s not a theory heavy academic text it s a practical code driven introduction to the essential ideas and mechanisms of computer science written for programmers who want more than syntax if you ve been writing python and are ready to explore the foundations behind computing this book will guide you there with clarity depth and purpose

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