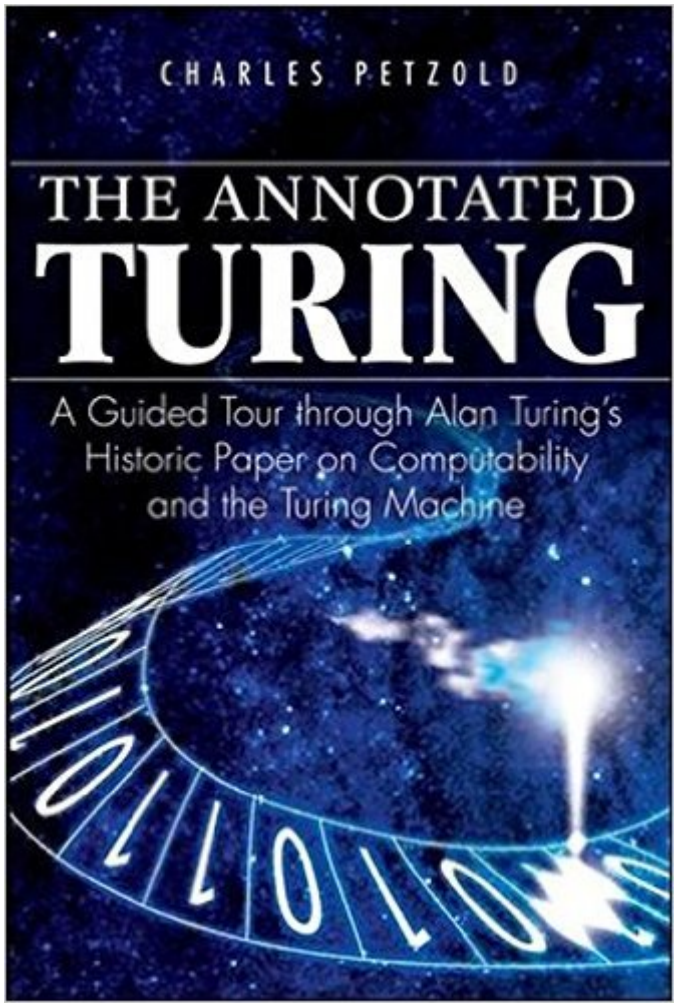
The Annotated Turing: A Guided Tour Through Alan Turing's Historic Paper On Computability And The Turing Machine



Synopsis

Programming Legend Charles Petzold unlocks the secrets of the extraordinary and prescient 1936 paper by Alan M. Turing Mathematician Alan Turing invented an imaginary computer known as the Turing Machine; in an age before computers, he explored the concept of what it meant to be computable, creating the field of computability theory in the process, a foundation of present-day computer programming. The book expands Turingâ ™s original 36-page paper with additional background chapters and extensive annotations; the author elaborates on and clarifies many of Turingâ ™s statements, making the original difficult-to-read document accessible to present day programmers, computer science majors, math geeks, and others. Interwoven into the narrative are the highlights of Turingâ ™s own life: his years at Cambridge and Princeton, his secret work in cryptanalysis during World War II, his involvement in seminal computer projects, his speculations about artificial intelligence, his arrest and prosecution for the crime of "gross indecency," and his early death by apparent suicide at the age of 41.

Book Information

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Customer Reviews

It was about 10 years ago when I first found Turing’s original paper on Internet and thought it wouldn’t be so hard to read and understand it (after all its "mere" computer science). Since then I’ve tried to digest it quite a few times on and off and never actually succeeded. Infect most of the time I got stuck on few nitty-gritty and just couldn’t move forward. I have even bought/borrowed almost all books on the subject that falls in to "popular science" types. Needless to say, like many such books

in same category, they just never go in to details and are practically useless for all practical purposes :).So imagine my surprise when I see a book with title "Annotated Turing" and by none other than Charles Petzold who I've known as author who normally writes programming books. That surprise was only a start. I was simply shocked when I opened the book. It was as-if someone read your dream and made it a reality with absolute precision with zero compromises. If there is one such book like this for all of the milestone scientific papers, there would be a revolution in learning.Let me put out some points what makes this book so perfect. Not just wishy-washy "near perfect", I'm saying SO PERFECT.*First, the book contains explanation of every single line in Turing's paper. Literally. The format of the book is a line quoted from Turing's paper in bold and a paragraph or so of explanation and discussions for that line. Author's claim is that you can actually cut out all those lines and stitch them to recreate the Turing's paper in its entirety complete with page numbers! Now that's what I call precision.*The book also includes all encompassing big picture overview, historical situation, importance, consequences and so on - nicely preparing reader for the journey.

This is one of those books that you'll love if you're into mathematics or hard-core computer science, but you'll become somewhat of a skimmer if you don't have the chops to keep up with theory and proofs.. The Annotated Turing: A Guided Tour Through Alan Turing's Historic Paper on Computability and the Turing Machine by Charles Petzold. And in case you're wondering, I fall into the second category. :)Contents:Part 1 - FoundationsThis Tomb Holds DiophantusThe Irrational and the TranscendentalCenturies of ProgressPart 2 - Computable NumbersThe Education of Alan TuringMachines at WorkAddition and MultiplicationAlso Known as SubroutinesEverything Is a NumberThe Universal MachineComputers and ComputabilityOf Machines and MenPart 3 - Das EntscheidungsproblemLogic and ComputabilityComputable FunctionsThe Major ProofThe Lambda CalculusConceiving the ContinuumPart 4 - And BeyondIs Everything a Turning Machine?The Long Sleep of DiophantusSelected BibliographyIndexIn order to give the reader a better understanding of Turing's paper on computing machines, Petzold takes each section of the original paper and adds commentary and background. The parts of the actual Turing paper are set off in shaded areas with a different font, preserving the line breaks, formatting, and even the typos when possible. By the time you're done with the book, you have a complete copy of Turing's original work. Petzold does a very good job in laying the foundations for concepts and conclusions in the paper. For instance, he provides a concise explanation of rational, irrational, real, and transcendental numbers in a way that most people can follow.

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