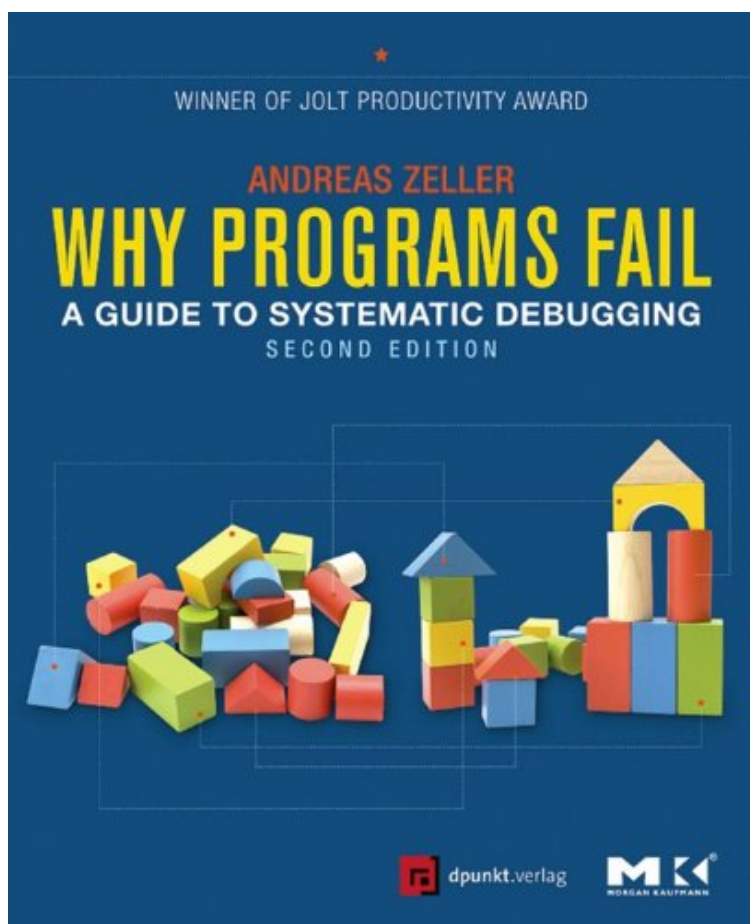


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# Why Programs Fail: A Guide to Systematic Debugging



*Par Andreas Zeller*

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## Description :

Prsentation de l'diteurThis book is proof that debugging has graduated from a black art to a systematic discipline. It demystifies one of the toughest aspects of software programming, showing clearly how to discover what caused software failures, and fix them with minimal muss and fuss. The fully updated second edition includes 100+ pages of new material, including new chapters on Verifying Code, Predicting Errors, and Preventing Errors. Cutting-edge tools such as FindBUGS and AGITAR are explained, techniques from integrated environments like Jazz.net are highlighted, and all-new demos with ESC/Java and Spec#, Eclipse and Mozilla are included.This complete and pragmatic overview of debugging is authored by Andreas Zeller, the talented researcher who developed the GNU Data Display Debugger(DDD), a tool that over 250,000 professionals use to visualize the data structures of programs while they are running. Unlike other books on debugging, Zeller's text is product agnostic, appropriate for all programming languages and skill levels.The book explains best practices ranging from systematically tracking error reports, to observing symptoms, reproducing errors, and correcting defects. It covers a wide range of tools and techniques from

hands-on observation to fully automated diagnoses, and also explores the author's innovative techniques for isolating minimal input to reproduce an error and for tracking cause and effect through a program. It even includes instructions on how to create automated debugging tools. The text includes exercises and extensive references for further study, and a companion website with source code for all examples and additional debugging resources is available.\*The new edition of this award-winning productivity-booster is for any developer who has ever been frustrated by elusive bugs\*Brand new chapters demonstrate cutting-edge debugging techniques and tools, enabling readers to put the latest time-saving developments to work for them\*Learn by doing. New exercises and detailed examples focus on emerging tools, languages and environments, including AGITAR, FindBUGS, Python and Eclipse.Revue de pressePraise from the experts for the first edition:"In this book, Andreas Zeller does an excellent job introducing useful debugging techniques and tools invented in both academia and industry. The book is easy to read and actually very fun as well. It will not only help you discover a new perspective on debugging, but it will also teach you some fundamental static and dynamic program analysis techniques in plain language."-Miryung Kim, Software Developer, Motorola Korea"Today every computer program written is also debugged, but debugging is not a widely studied or taught skill. Few books beyond this one present a systematic approach to finding and fixing programming errors." -James Larus, Microsoft Research"From the author of ODD, the famous data display debugger, now comes the definitive book on debugging. Zeller's book is chock-full with advice, insight, and tools to track down defects in programs, for all levels of experience and any programming language. The book is lucidly written, explaining the principles of every technique without boring the reader with minutiae. And best of all, at the end of each chapter it tells you where to download all those fancy tools. A great book for the software professional as well as the student interested in the frontiers of automated debugging."-Walter F. Tichy, Professor, University Karlsruhe, Germany"Andreas Zeller's Why Programs Fail lays an excellent foundation for practitioners, educators, and researchers alike. Using a disciplined approach based on the scientific method, Zeller provides deep insights, detailed approaches, and illustrative examples."-David Notkin, Professor Computer Science Engineering, University of WashingtonPrésentation de l'éditeurThis book is proof that debugging has graduated from a black art to a systematic discipline. It demystifies one of the toughest aspects of software programming, showing clearly how to discover what caused software failures, and fix them with minimal muss and fuss. The fully updated second edition includes 100+ pages of new material, including new chapters on Verifying Code, Predicting Errors, and Preventing Errors. Cutting-edge tools such as FindBUGS and AGITAR are explained, techniques from integrated environments like Jazz.net are highlighted, and all-new demos with ESC/Java and Spec#, Eclipse and Mozilla are included.This complete and pragmatic overview of debugging is authored by Andreas Zeller, the talented researcher who developed the GNU Data Display Debugger(DDD), a tool that over 250,000 professionals use to visualize the data structures of programs while they are running. Unlike other books on debugging, Zeller's text is product agnostic, appropriate for all programming languages and skill levels.The book explains best practices ranging from systematically tracking error reports, to observing symptoms, reproducing errors, and correcting defects. It covers a wide range of tools and techniques from hands-on observation to fully automated diagnoses, and also explores the author's innovative techniques for isolating minimal input to reproduce an error and for tracking cause and effect through a program. It even includes instructions on how to create automated debugging tools. The text includes exercises and extensive references for further study, and a companion website with source code for all examples and additional debugging resources is available.\*The new edition of this award-winning productivity-booster is for any developer who has ever been frustrated by elusive bugs\*Brand new chapters demonstrate cutting-edge debugging techniques and tools, enabling readers to put the latest time-saving developments to work for them\*Learn by doing. New exercises and detailed examples focus on emerging tools, languages and environments, including AGITAR, FindBUGS, Python and Eclipse.