Reverse Engineering: An Industrial Perspective (Springer Series in Advanced Manufacturing)

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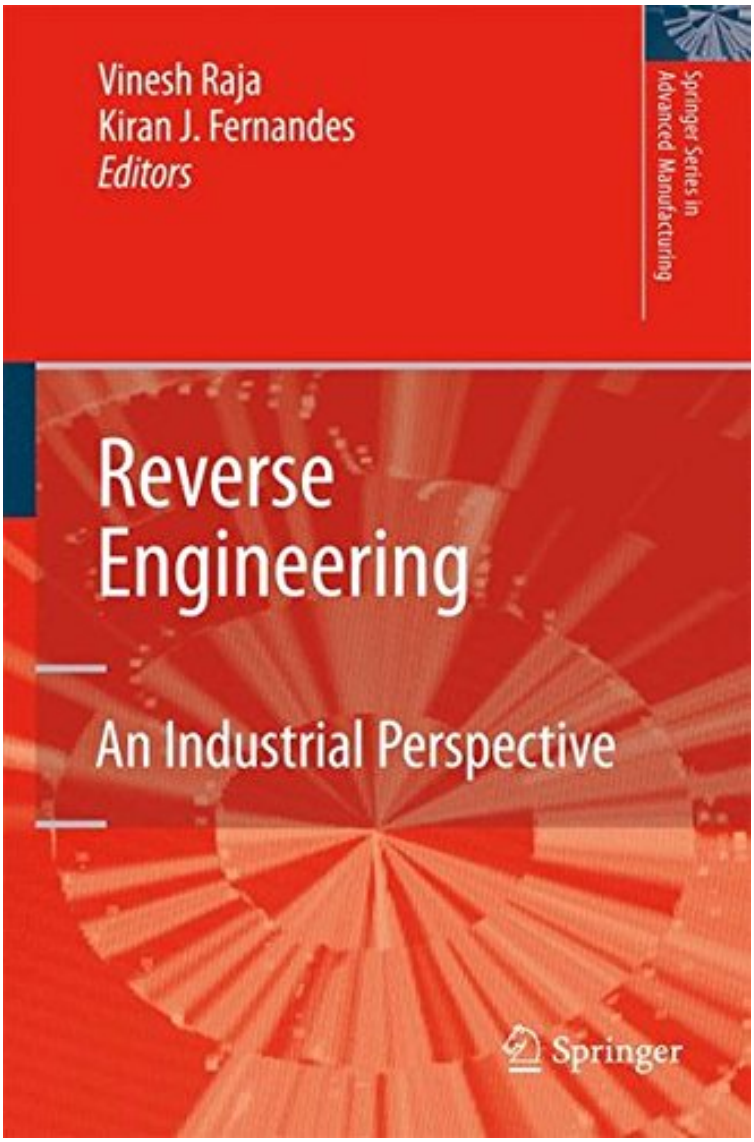

#5331935 in Books 2010-12-08Original language:EnglishPDF # 1 9.25 x .62 x 6.10l, .82 #File Name: 1849966605242 pages | File size: 76.Mb

From Springer : Reverse Engineering: An Industrial Perspective (Springer Series in Advanced Manufacturing) before purchasing it in order to gage whether or not it would be worth my time, and all praised Reverse Engineering: An Industrial Perspective (Springer Series in Advanced Manufacturing):

4 of 4 people found the following review helpful. Good technical resource, but ignore the last two chaptersBy

tomcThis book is a collection of chapters written by various academics and industry representatives. Overall, it is an excellent resource for anyone interested in 3D scanning and reverse engineering, especially as they relate to manufacturing and mechanical CAD/CAM/CAE. Chapters 1 - 4 cover the technological aspects, and do a very good job of it. Because each chapter was contributed by a different group, they are somewhat repetitive, but given the complexity of the topic it's actually useful to get a few different points of view. The only problem with these chapters is that the information is a bit outdated already, but this isn't that surprising given the pace of development in 3D scanning and RE technologies. Of important note is that the book does not cover the so called 3rd generation process of making a parametric CAD solid model from 3D scan data, which is a newer development and is often the best method for mechanical reverse engineering.Chapters 5 6 cover rapid prototyping (RP), which is somewhat off-topic for the premise of the book, but many organizations use reverse engineering and RP together, so it's understandable that the editors included some information about RP technology.Chapters 7-9 offer various real-world case studies of how 3D scanning has been used by various companies. These 3 chapters were all contributed by a single software vendor in the industry, but generally seem to be impartially written and not just marketing fluff. They serve as useful examples of how different companies make use of 3D scanning/RE.Unfortunately, the last 2 chapters of the book are not really helpful at all. Chapter 10, Legal Aspects of Reverse Engineering, is especially out of place - it covers software reverse engineering (read: decompiling software to discover its source code). I'm not sure what the editors were thinking when they included this chapter - the book is about industrial RE of physical objects, which has nothing to do with decompiling software. The chapter is at best completely irrelevant and at worst gives the false impression that mechanical RE is akin to software code RE. As for the legal aspects of 3D scanning and mechanical RE, there isn't much case law to refer to, but in general the courts have found that 3D scanning and remodeling of a legally obtained object is legally similar to taking a photograph of an object (Search Meshwerks v. Toyota for a recent decision on the topic). The final chapter on Barriers to Adopting Reverse Engineering isn't particularly helpful either, as it seems to be a general article on capital purchase decisions and has no specific connection to 3D scanning/reverse engineering technology purchases (Chapter 4 does a much better job of informing potential buyers what to look for).Again, overall I would recommend this book to anyone interested in 3D scanning, and particularly to anyone considering acquiring the technology - just focus on the first four chapters and forget the last 2!

This edited collection of essays from world-leading academic and industrial authors yields insight into all aspects of reverse engineering. Methods of reverse engineering analysis are covered, along with special emphasis on the investigation of surface and internal structures. Frequently-used hardware and software are assessed and advice given on the most suitable choice of system. Also covered is rapid prototyping and its relationship with successful reverse engineering.

From the Back CoverReverse engineering is the process of discovering the technological principles of an object or component through analysis of its structure and function. Such analysis can then be used to redesign the object very quickly using computer-aided design in concert with rapid-manufacturing processes to produce small numbers of components adapted to the needs of a particular customer. This way of working has huge benefits of speed and flexibility over traditional mass-production-based design and manufacturing processes. This edited collection of essays from world-leading academic and industrial authors yields insight into all aspects of reverse engineering: The methods of reverse engineering analysis are covered, with special emphasis on the investigation of surface and internal structures. Frequently-used hardware and software are assessed and advice given on the most suitable choice of system. Rapid prototyping is introduced and its relationship with successful reverse engineering is discussed. Importantly, legal matters surrounding reverse engineering are addressed as are other barriers to the adoption of these techniques. Applications of reverse engineering in three significant areas: automotive; aerospace; and medical engineering are reported in depth. Reverse Engineering is a "must have" title for anyone working with advanced modern manufacturing technologies, either with a view to researching and improving them further or to making their company leaner and more agile in a competitive manufacturing marketplace. The Springer Series in Advanced Manufacturing publishes the best teaching and reference material to support students, educators and practitioners in manufacturing technology and management. This international series includes advanced textbooks, research monographs, edited works and conference proceedings covering all subjects in advanced manufacturing. The series focuses on new topics of interest, new treatments of more traditional areas and coverage of the applications of information and communication technology in manufacturing.About the AuthorProfessor Vinesh Raja is a Professorial Fellow in Informatics at the University of Warwick. He is in-charge of the Informatics Group, which encompasses the Virtual Reality Center (VRC) and the Collaborative Product Commerce Center (CPC) at the Warwick Manufacturing Group. He focuses on augmenting and extending everyday, learning and work activities with interactive technologies that move beyond the desktop. This involves designing enhanced user experiences through appropriating and assembling a diversity of technologies including haptics, handheld and pervasive computing. The main focus of his research is not the technology per se but the design and integration of the digital representations that are presented via

them to support social and cognitive activities in ways that extend current capabilities. Dr. Kiran Jude Fernandes is the 40th Anniversary Research Lecturer in Management at the University of York. He has been a pioneer in the systematic study of Information Modelling Techniques and Tools and has studied their evolution using techniques from the Biological Sciences Domain. His research and teaching interests include strategic uses of information systems, information management, and the impact of information technology on the risks and benefits of outsourcing and strategic alliances. Prior to joining the University of York, Kiran worked at the University of Warwick and the NASA John C. Stennis Space Center.