Title	My favorite books
Sub Title	
Author	
Publisher	Faculty of Science and Technology, Keio University
Publication year	2015
Jtitle	New Kyurizukai No.20 (2015. 10) ,p.7- 7
JaLC DOI	
Abstract	
Notes	
Genre	Article
URL	https://koara.lib.keio.ac.jp/xoonips/modules/xoonips/detail.php?koara_id=KO50001003-00000020-0007

私の本棚

My favorite books

Convex Analysis and Monotone Operator Theory in Hilbert Spaces

Coauthored by H. H. Bauschke and P. L Combettes who have led the field of convex analysis, this book is an indisputable masterpiece representing the modern convex analysis theories. The outstanding feature of this book is that the theory has been developed in general Hilbert spaces. Though its content targets specialists, it is self-contained and readers can follow theoretical demonstrations without referring to other books as long as they have undergraduate-level basic knowledge. I strongly recommend this book to those graduate students who aim to become world's leading researchers. In my graduate course (spring, 2015), I explained some topics relating to this book.

Introduction to Kernel Method

The kernel method is a technique which is a focus of attention in the field of machine learning, which is being applied to a variety of nonlinear problems including pattern recognition. This book deals with wide-ranging topics from the basics of the kernel method to recent research trends. It helps you acquire a grounding in the theory of reproducing kernel, which is deeply related to complex analysis, as well as its applications. Knowledge about Lebesgue integral will help you understand it more deeply.

Functional Analysis for Engineering

Taking many years, Prof. Isao Yamada (Tokyo Institute of Technology), a world leader in optimization and signal processing, elaborated this great book for engineering students. I still remember I, while studying in the master's course, devoted myself to "Short Course for Hilbert Spaces" – his lecture material which became the prototype of this book. If you go on reading it up to Chapter 7 in spite of anything you don't understand, you'll find yourself able to command an overview, from vector spaces to convex optimization. What's most important is that you have a full understanding of Hilbert spaces; in fact, a number of problems, in sciences and engineering, can be formularized using Hilbert spaces. Once you have become able to develop discussions in terms of Hilbert spaces, possibilities of application will be unlimited.

30 Lectures as Introduction to Analysis

A mastery of the concept of convergence of real number sequences will allow you to understand more advanced concepts, such as complex analysis and functional analysis. Inclusion of "Tea Time" pages make this book easily readable. I advise those, who are still uncertain of their ability in real analysis, to acquire as early as possible the knowledge and techniques offered by this book.

Shinichi Hoshi

This book is a collection of short-short SF stories by Shinichi Hoshi. Even those who are not good at long novels can read this book with ease. It's ideal as reading for break time or before going to bed.

Elementary Linear Algebra

This book is recommended to those who say "Linear algebra was too abstract to understand although I learned it as a first-year undergraduate student." Thorough explanation facilitates your understanding. It's especially advisable to have a full understanding of linear spaces, linear transformation, eigenvalues and eigenvectors. The classic "Linear Algebra and Its Applications" authored by Gilbert Strang is also recommended.

The Best of All Possible Worlds: Mathematics and Destiny

This book for general readers was written by I. Ekeland who has contributed to a wide range of fields from convex analysis and variational problems to game theories to economics. The concept of "optimization" aiming to minimize (or maximize) a given objective function was created as humans' interest expanded from sciences for the explanation of physical phenomena to engineering. Today, the scope of application of optimization is not limited to engineering, but expands to include economics, management and financial engineering. Difficult challenges keep arising, such as those urging us to seek solutions to the question "Can we organize the best possible society through optimization?". In this book, the author reveals his unique view of the world as a researcher having a philosopher as his mother, which gives me food for thought about my own way of life as a researcher.