

Contents

1	An Introduction to Recommendation Systems in Software Engineering	1
	Martin P. Robillard and Robert J. Walker	
 Part I Techniques		
2	Basic Approaches in Recommendation Systems	15
	Alexander Felfernig, Michael Jeran, Gerald Ninaus, Florian Reinfrank, Stefan Reiterer, and Martin Stettinger	
3	Data Mining	39
	Tim Menzies	
4	Recommendation Systems in-the-Small	77
	Laura Inozemtseva, Reid Holmes, and Robert J. Walker	
5	Source Code-Based Recommendation Systems	93
	Kim Mens and Angela Lozano	
6	Mining Bug Data	131
	Kim Herzig and Andreas Zeller	
7	Collecting and Processing Interaction Data for Recommendation Systems	173
	Walid Maalej, Thomas Fritz, and Romain Robbes	
8	Developer Profiles for Recommendation Systems	199
	Annie T.T. Ying and Martin P. Robillard	
9	Recommendation Delivery	223
	Emerson Murphy-Hill and Gail C. Murphy	

Part II Evaluation

10 Dimensions and Metrics for Evaluating Recommendation Systems	245
Iman Avazpour, Teerat Pitakrat, Lars Grunske, and John Grundy	
11 Benchmarking	275
Alan Said, Domonkos Tikk, and Paolo Cremonesi	
12 Simulation	301
Robert J. Walker and Reid Holmes	
13 Field Studies	329
Ayşe Tosun Mısırlı, Ayşe Bener, Bora Çağlayan, Gül Çalıkılı, and Burak Turhan	

Part III Applications

14 Reuse-Oriented Code Recommendation Systems	359
Werner Janjic, Oliver Hummel, and Colin Atkinson	
15 Recommending Refactoring Operations in Large Software Systems	387
Gabriele Bavota, Andrea De Lucia, Andrian Marcus, and Rocco Oliveto	
16 Recommending Program Transformations	421
Miryung Kim and Na Meng	
17 Recommendation Systems in Requirements Discovery	455
Negar Hariri, Carlos Castro-Herrera, Jane Cleland-Huang, and Bamshad Mobasher	
18 Changes, Evolution, and Bugs	477
Markus Borg and Per Runeson	
19 Recommendation Heuristics for Improving Product Line Configuration Processes	511
Raúl Mazo, Cosmin Dumitrescu, Camille Salinesi, and Daniel Diaz	
Glossary	539
Index	555