

Part I Variability Management

1 Software Product Line Engineering	3
Jan Bosch	
2 Variability Modeling	25
Kyo C. Kang and Hyesun Lee	
3 Variability Scope	43
Rafael Capilla	
4 Binding Time and Evolution	57
Rafael Capilla and Jan Bosch	
5 Variability Implementation	75
Jan Bosch and Rafael Capilla	
6 Variability Realization Techniques and Product Derivation	87
Rafael Capilla	
7 Visualizing Software Variability	101
Steffen Thiel, Ciarán Cawley, and Goetz Botterweck	
8 Variability in the Software Product Line Life cycle	119
Kyo C. Kang, Hyesun Lee, and Jaejoon Lee	

Part II Review of Research and Commercial Tools

9 COVAMOF	141
Jan Bosch, Sybren Deelstra, and Marco Sinnema	
10 PLUM: Product Line Unified Modeler Tool	151
Cristina López and Jason X. Mansell	

11 FaMa	163
David Benavides, Pablo Trinidad, Antonio Ruiz-Cortés, and Sergio Segura	
12 pure::variants	173
Danilo Beuche	

Part III Industry Experiences

13 Philips Healthcare Compositional Diversity Case	185
Frank van der Linden	
14 Variability in Power Plant Control Software	203
Masami Okamoto, Makoto Fujii, and Yoshihiro Matsumoto	
15 Second-Generation Product Line Engineering: A Case Study at General Motors	223
Rick Flores, Charles Krueger, and Paul Clements	

Part IV Emerging and Research Topics in Software Variability

16 Dynamic Software Product Lines	253
Svein Hallsteinsen, Mike Hinchey, Sooyong Park, and Klaus Schmid	
17 Variability in Autonomic Computing	261
Carlos Cetina and Vicente Pelechano	
18 Variability in Web Services	269
Matthias Galster and Paris Avgeriou	
19 Service-Oriented Product Lines	279
Jaejoon Lee and Gerald Kotonya	
20 Software Variability and Design Decisions	287
Rafael Capilla and Jan Bosch	
21 Variability and Aspect Orientation	293
Kwanwoo Lee	

Biography of the Authors	301
Index	311