Referências

1. ALUR, D.; MALKS, D.; and CRUPI, J. **Core J2EE Patterns: Best Practices and Design Strategies**. Second Edition ed. 2003: Prentice Hall PTR.
2. ALVES, V. Implementing Software Product Line Adoption Strategies, Phd Thesis. March 2007, Centro de Informática, Universidade Federal de Pernambuco.
3. ALVES, V.; CARDIM, I.; VITAL, H.; SAMPAIO, P. H. M.; DAMASCENO, A. L. G.; BORBA, P.; and RAMALHO, G. Comparative Analysis of Porting Strategies in J2me Games. **21st IEEE International Conference on Software Maintenance (ICSM 2005)**. Budapest, Hungary, September 2005, IEEE Computer Society 2005, pp. 123-132.
4. ALVES, V.; GHEYI, R.; MASSONI, T.; KULESZA, U.; BORBA, P.; and LUCENA, C. Refactoring Product Lines. **Proceedings of the 5th international conference on Generative programming and component engineering**. Portland, Oregon, USA, 2006, ACM Press, pp. 201-210.
5. ALVES, V.; MATOS, P.; COLE, L.; BORBA, P.; and RAMALHO, G. Extracting and Evolving Mobile Games Product Lines. **Proceedings of Software Product Line Conference (SPLC´2005)**, 2005, Springer-Verlag, pp. 70-81.
6. ANTKIEWICZ, M. and CZARNECKI, K. Featureplugin: Feature Modeling Plug-in for Eclipse. **Proceedings of the 2004 OOPSLA workshop on eclipse technology eXchange**. Vancouver, British Columbia, Canada, 2004, ACM Press, pp. 67-72.
7. APEL, S. and BATORY, D. When to Use Features and Aspects?: A Case Study. **Proceedings of the 5th international conference on Generative programming and component engineering**. Portland, Oregon, USA, 2006, ACM Press, pp. 59-68.
8. APEL, S.; LEICH, T.; and SAAKE, G. Aspectual Mixin Layers: Aspects and Features in Concert. **Proceeding of the 28th international conference on Software engineering**. Shanghai, China, 2006, ACM Press, pp. 122-131.
9. BALDWIN, C. Y. and CLARK, K. B. **Design Rules: The Power of Modularity**. 2000, Cambridge, MA: MIT Press.
10. BANIASSAD, E. Discovering Early Aspects. **IEEE Software, Special Issue on Aspect-Oriented Programming**, 2006. 23(1): pp. 61-70.
11. BASSETT, P. G. **Framing Software Reuse: Lessons from the Real World**. 1996: Prentice Hall.
12. BATISTA, T.; CHAVEZ, C.; GARCIA, A.; KULESZA, U.;

SANT'ANNA, C.; and LUCENA, C. Aspectual Connectors: Supporting the Seamless Integration of Aspects and Adls. **XX Simpósio Brasileiro de Engenharia de Software (SBES'2006)**. Florianópolis, 2006,

13. BATISTA, T.; CHAVEZ, C.; GARCIA, A.; RASHID, A.; SANT'ANNA, C.; KULESZA, U.; and FILHO, F. C. Reflections on Architectural Connection: Seven Issues on Aspects and Adls. **Proceedings of the 2006 International Workshop on Early Aspects at ICSE**. Shanghai, China, 2006, ACM Press, pp. 3-10.
14. BATORY, D.; CARDONE, R.; and SMARAGDAKIS, Y. Object-Oriented Frameworks and Product-Lines. **1st Software Product-Line Conference (SPLC'2000)**. Denver, 1999, pp. 227-248.
15. BATORY, D.; SARVELA, J. N.; and RAUSCHMAYER, A. Scaling Step-Wise Refinement. **Proceedings of the 25th International Conference on Software Engineering**. Portland, Oregon, 2003, IEEE Computer Society, pp. 187-197.
16. BOOCH, G.; JACOBSON, I.; and RUMBAUGH, J. **Unified Modeling Language - User's Guide**. 1999: Addison-Wesley.
17. BOSCH, J. Design of an Object-Oriented Framework for Measurement Systems, **Domain-Specific Application Frameworks**. 1999, John Wiley. pp. 177-205.
18. BUDINSKY, F.; STEINBERG, D.; MERKS, E.; ELLERSICK, R.; and GROSE, T. **Eclipse Modeling Framework**. 2003: Addison-Wesley.
19. BUSCHMANN, F.; MEUNIER, R.; ROHNERT, H.; SOMMERLAD, P.; and STAL, M. **Pattern-Oriented Software Architecture, Volume 1: A System of Patterns**. 1996: Wiley.
20. CACHO, N.; SANT'ANNA, C.; FIGUEIREDO, E.; GARCIA, A.; BATISTA, T.; and LUCENA, C. Composing Design Patterns: A Scalability Study of Aspect-Oriented Programming. **Proceedings of the 5th International Conference on Aspect-oriented Software Development**. Bonn, Germany, 2006, ACM Press, pp. 109-121.
21. CAMARGO, V. and MASIERO, P. Frameworks Orientado a Aspectos. **IX Simpósio Brasileiro de Engenharia de Software (SBES'2005)**. Uberlândia, 2005,
22. CAMARGO, V. V. D. Frameworks Transversais: Definições, Classificações, Arquitetura E Utilização Em Um Processo De Desenvolvimento De Software, Phd Thesis. September 2006, Instituto de Ciências Matemáticas e de Computação (ICMC), Universidade de São Paulo.
23. CHAVEZ, C.; GARCIA, A.; KULESZA, U.; SANT'ANNA, C.; and LUCENA, C. Crosscutting Interfaces for Aspect-Oriented Modeling. **Journal of the Brazilian Computer Society**, 2006. 11(3): pp. 43-58.
24. CHAVEZ, C. V. F. A Model-Driven Approach to Aspect-Oriented Design, Phd Thesis, **Computer Science Department**. 2004, PUC-Rio.
25. CHIDAMBER, S. and KEMERER, C. A Metrics Suite for Oo Design. **IEEE Transations on Software Engineering**, June 1994. 20(6): pp. 476-

493.

26. CIRILO, E.; KULESZA, U.; and LUCENA, C. Genarch – a Model-Based Product Derivation Tool. **Proceedings of Simpósio Brasileiro de Componentes, Arquitetura e Reutilização de Software (SBCARS´2007)**. Campinas, Brazil, August 2007, pp. 31-46.
27. CLEMENTS, P. and NORTHROP, L. **Software Product Lines: Practices and Patterns**. 2001: Addison-Wesley Professional.
28. CODENIE, W.; HONDT, K. D.; STEYAERT, P.; and VERCAMMEN, A. From Custom Applications to Domain-Specific Frameworks. **Commun. ACM**, 1997. 40(10): pp. 70-77.
29. COELHO, R.; ALVES, V.; KULESZA, U.; NETO, A. C.; GARCIA, A.; STAA, A. V.; LUCENA, C.; and BORBA, P. On Testing Crosscutting Features Using Extension Join Points. **International 3rd Workshop on Software Product Line Testing, 3rd (SPLiT 2006), in conjunction with 10th International Software Product Line Conference (SPLC 2006),**. Baltimore, Maryland, 2006, pp. 23-30.
30. COELHO, R. and STAA, A. V. Using Interfaces to Support the Testing of Crosscutting Features, **Companion to the 21st ACM SIGPLAN conference on Object-oriented programming systems, languages, and applications**. 2006, ACM Press: Portland, Oregon, USA.
31. COLYER, A. **Eclipse Aspectj: Aspect-Oriented Programming with Aspectj and the Eclipse Aspectj Development Tools**. 2004: Addison-Wesley.
32. CZARNECKI, K. Overview of Generative Software Development. **Proceedings of the European Commission and US National Science Foundation Strategic Research - Workshop on Unconventional Programming Paradigms**. Mont Saint-Michel, France, 2004,
33. CZARNECKI, K. and EISENECKER, U. W. **Generative Programming: Methods, Tools, and Applications**. 2000: ACM Press/Addison-Wesley Publishing Co. 832.
34. CZARNECKI, K. and HELSEN, S. Feature-Based Survey of Model Transformation Approaches. **IBM Systems Journal**, 2006. 45(3): pp. 621-640.
35. CZARNECKI, K.; HELSEN, S.; and EISENECKER, U. Staged Configuration Using Feature Models. **3rd Software Product-Line Conference (SPLC'2004)**, September 2004,
36. DIAS, K. L. Um Framework Orientado a Aspectos Para Monitoramento E Análise De Processos De Negócio, Proposta De Dissertação De Mestrado, **Departamento de Informática**. March 2007, PUC-Rio.
37. FAYAD, M.; SCHMIDT, D.; and JOHNSON, R. **Building Application Frameworks: Object-Oriented Foundations of Framework Design**. 1999: John Wiley & Sons.
38. FAYAD, M. and SCHMIDT, D. C. Object-Oriented Application Frameworks. **Commun. ACM**, 1997. 40(10): pp. 32-38.

39. FENTON, N. and PFLEEGER, S. **Software Metrics: A Rigorous Practical Approach**. 1997: London: PWS.

40. FILHO, F. C.; CACHO, N.; FIGUEIREDO, E.; MARANHÃO, R.; GARCIA, A.; and RUBIRA, C. M. F. Exceptions and Aspects: The Devil Is in the Details, **Proceedings of the 14th ACM SIGSOFT International Symposium on Foundations of Software Engineering**. 2006, ACM Press: Portland, Oregon, USA.

41. FILHO, I. M.; OLIVEIRA, T. C. D.; and LUCENA, C. J. P. D. A Framework Instantiation Approach Based on the Features Model. **Journal of Systems and Software**, 2004. 73(2): pp. 333-349

42. FILMAN, R.; ELRAD, T.; CLARKE, S.; and AKSIT, M. **Aspect-Oriented Software Development**. 2005: Addison-Wesley.

43. FILMAN, R. and FRIEDMAN, D. Aspect-Oriented Programming Is Quantification and Obliviousness, **Aspect-Oriented Software Development**. 2005, Addison-Wesley. pp. 21-35.

44. FOWLER, A. **A Swing Architecture Overview, Sun Developer Network, Url: [http://java.sun.com/products/jfc/tsc/articles/architecture/].** December 2005.

45. GAMMA, E.; HELM, R.; JOHNSON, R.; and VLISSIDES, J. **Design Patterns: Elements of Reusable Object-Oriented Software**. 1995: Addison-Wesley Longman Publishing Co., Inc. 395.

46. GARCIA, A. From Objects to Agents: An Aspect-Oriented Approach, Phd Thesis, **Computer Science Department**. 2004, PUC-Rio.

47. GARCIA, A.; CHAVEZ, C.; BATISTA, T. V.; SANT'ANNA, C.; KULESZA, U.; RASHID, A.; and LUCENA:, C. J. P. D. On the Modular Representation of Architectural Aspects. **Third European Workshop on Software Architecture, EWSA 2006**. Nantes, France, September, 2006, Springer, pp. 82-97.

48. GARCIA, A.; KULESZA, U.; SANT'ANNA, C.; and LUCENA., C. The Mobility Aspect Pattern. **Proceedings of the Fourth Latin American Conference on Pattern Languages of Programming (SugarLoafPLoP'04)**. Fortaleza, Brazil, August 2004,

49. GARCIA, A.; KULESZA, U.; SARDINHA, J.; MILIDIÚ, R.; and LUCENA., C. The Learning Aspect Pattern. **The 11th Conference on Pattern Languages of Programs (PLoP2004)**. Monticello, Illinios, USA, September 2004,

50. GARCIA, A.; LUCENA, C.; and COWAN, D. Agents in Object-Oriented Software Engineering. **Software: Practice and Experience**, May 2004. 34(5): pp. 1-33.

51. GARCIA, A.; SANT'ANNA, C.; FIGUEIREDO, E.; KULESZA, U.; LUCENA, C.; and STAA, A. V. Modularizing Design Patterns with Aspects: A Quantitative Study. **Proceedings of the 4th international conference on Aspect-oriented software development**. Chicago, Illinois, 2005, ACM Press, pp. 3-14.

52. GODIL, I. and JACOBSEN, H.-A. Horizontal Decomposition of Prevayler. **Proceedings of the 2005 conference of the Centre for Advanced Studies on Collaborative Research**. Toronto, Ontario, Canada, October 2005, IBM 2005, pp. 83-100.

53. GREENFIELD, J. and SHORT, K. **Software Factories: Assembling Applications with Patterns, Frameworks, Models and Tools**. 2005: John Wiley and Sons.

54. GREENFIELD, J.; SHORT, K.; COOK, S.; and KENT, S. **Software Factories: Assembling Applications with Patterns, Models, Frameworks, and Tools**. 2004: Wiley.

55. GREENWOOD, P.; BARTOLOMEI, T.; FIGUEIREDO, E.; DOSEA, M.; GARCIA, A.; CACHO, N.; SANT'ANNA, C.; SOARES, S.; BORBA, P.; KULESZA, U.; and RASHID, A. On the Impact of Aspectual Decompositions on Design Stability: An Empirical Study. **European Conference of Object-Oriented Programming (ECOOP'07)**, 2007, Springer-Verlag, pp. 176-200.

56. GRISWOLD, W.; SULLIVAN, K. J.; SONG, Y.; SHONLE, M.; TEWARI, N.; CAI, Y.; and RAJAN, H. Modular Software Design with Crosscutting Interfaces. **IEEE Software, Special Issue on Aspect-Oriented Programming**, 2006. 23(1): pp. 51-60.

57. HANENBERG, S.; SCHMIDMEIER, A.; and UNLAND, R. Aspectj Idioms for Aspect-Oriented Software Construction. **Proceedinges of 8th European Conference on Pattern Languages of Programs (EuroPLoP'2003)**, 2003,

58. HANNEMANN, J. and KICZALES, G. Design Pattern Implementation in Java and Aspectj. **Proceedings of the 17th ACM SIGPLAN conference on Object-oriented programming, systems, languages, and applications**. Seattle, Washington, USA, 2002, ACM Press, pp. 161-173.

59. JACKSON, M. and ZAVE, P. Distributed Feature Composition: A Virtual Architecture for Telecommunications Services. **IEEE Transactions on Software Engineering**, October 1998.

60. JACOBSON, I. Use Cases and Aspects – Working Seamlessly Together. **Journal of Object Technology**, August 2003. 2(4): pp. 7-28.

61. JACOBSON, I.; CHRISTERSON, M.; JONSSON, P.; and OVERGAARD, G. **Object-Oriented Software Engineering: A Use Case Driven Approach**. 1992: Addison-Wesley.

62. JACOBSON, I. and NG, P.-W. **Aspect-Oriented Software Development with Use Cases.** Object Technology Series. 2004: The Addison-Wesley

63. JARKE, M. Requirements Tracing. **Commun. ACM**, 1998. 41(12): pp. 32-36.

64. JOHNSON, R. and FOOTE, B. Designing Reusable Classes. **Journal of Object-Oriented Programming**, 1988. 1: pp. 22-35.

65. JOHNSON, R.; HOELLER, J.; ARENDSEN, A.; RISBERG, T.; and SAMPALEANU, C. **Professional Java Development with the Spring**

Framework. 2005: Wrox.

66. KERSTEN, M. Aop Tools Comparison: Development Environments, **IBM Developers Work**. 2005.

67. KERSTEN, M. and MURPHY, G. C. Atlas: A Case Study in Building a Web-Based Learning Environment Using Aspect-Oriented Programming. **Proceedings of the 14th ACM SIGPLAN Conference on Object-oriented programming, systems, languages, and applications**. Denver, Colorado, United States, 1999, ACM Press, pp. 340-352.

68. KICZALES, G. Aspect-Oriented Programming. **European Conference of Object-Oriented Programming (ECOOP'97)**, 1997, Springer-Verlag, pp. 220-242.

69. KICZALES, G.; HILSDALE, E.; HUGUNIN, J.; KERSTEN, M.; PALM, J.; and GRISWOLD, W. Getting Started with Aspectj. **Commun. ACM**, 2001. 44(10): pp. 59-65.

70. KICZALES, G.; HILSDALE, E.; HUGUNIN, J.; KERSTEN, M.; PALM, J.; and GRISWOLD, W. An Overview of Aspectj. **Proceedings of the 15th European Conference on Object-Oriented Programming (ECOOP'01)**, 2001,

71. KRUEGER, C. Easing the Transition to Software Mass Customization. **4th International Workshop on Software Product-Family Engineering (PFE'2001)**, 2001, pp. 282-293.

72. KULESZA, R.; KULESZA, U.; and BRESSAN, G. Implementing an Adaptation Layer for Multimedia Servers Using Aspect-Oriented Programming. **Proceedings of the 12th Brazilian Symposium on Multimedia and the Web (WebMedia 2006)**. Natal, Rio Grande do Norte, Brazil, November 2006, ACM 2006, pp. 293-302.

73. KULESZA, U.; ALVES, V.; GARCIA, A.; LUCENA, C. J. P. D.; and BORBA, P. Improving Extensibility of Object-Oriented Frameworks with Aspect-Oriented Programming, **Proceedings of 9th International Conference on Software Reuse, Icsr 2006 Turin, Italy, June 12-15, 2006. Lecture Notes in Computer Science: Reuse of Off-the-Shelf Components**. 2006, Springer-Verlag. pp. 231-245.

74. KULESZA, U.; ALVES, V.; GARCIA, A.; NETO, A. C.; CIRILO, E.; LUCENA, C.; and BORBA, P. Mapping Features to Aspects: A Model-Based Generative Approach. **Early Aspects 2007 Workshop, AOSD'2007**. Vancouver, Canada, 2007, Springer-Verlag, pp. 155-174.

75. KULESZA, U.; COELHO, R.; ALVES, V.; NETO, A. C.; GARCIA, A.; LUCENA, C.; STAA, A. V.; and BORBA, P. Implementing Framework Crosscutting Extensions with Xpis and Aspectj. **Proceedings of XX Simpósio Brasileiro de Engenharia de Software (SBES'2006)**. Florianópolis, 2006, pp. 177-192.

76. KULESZA, U.; GARCIA, A.; BLEASBY, F.; and LUCENA, C. Instantiating and Customizing Product Line Architectures Using Aspects and Crosscutting Feature Models. **Workshop on Early Aspects, OOPSLA'2005**. San Diego, EUA, 2005,

77. KULESZA, U.; GARCIA, A.; and LUCENA, C. An Aspect-Oriented Generative Approach. **Companion to the 19th annual ACM SIGPLAN conference on Object-oriented programming systems, languages, and applications**. Vancouver, BC, CANADA, 2004, ACM Press, pp. 166-167.

78. KULESZA, U.; GARCIA, A.; and LUCENA, C. Composing Object-Oriented Frameworks with Aspect-Oriented Programming, **Monografias em Informática**. 2006, Computer Science Department, PUC-Rio: Brazil.

79. KULESZA, U.; GARCIA, A.; LUCENA, C.; and ALENCAR, P. A Generative Approach for Multi-Agent System Development, **Software Engineering for Multi-Agent Systems Iii**. 2004, Springer-Verlag. pp. 52-69.

80. KULESZA, U.; GARCIA, A.; LUCENA, C.; and STAA, A. V. Integrating Generative and Aspect-Oriented Technologies. **Proceedings of XVIII Simpósio Brasileiro de Engenharia de Software (SBES'2004)**. Brasília, Brazil, October 2004, pp. 130-146.

81. KULESZA, U.; LUCENA, C.; ALENCAR, P.; and GARCIA, A. Customizing Aspect-Oriented Variabilites Using Generative Techniques. **Proceedings of International Conference on Software Engineering and Knowledge Engineering (SEKE'06)**. San Francisco, July 2006, pp. 17-22.

82. KULESZA, U. and LUCENA, C. J. P. An Aspect-Oriented Approach to Framework Development. **Proceedings of 4th Software Product Line Doctoral Symposium, In conjunction with the 10th Software Product Lines International Conference - SPLC, Technical Report.** Baltimore, MD, USA August, 2006, Fraunhover IESE, pp. 67-79.

83. KULESZA, U.; SANT'ANNA, C.; GARCIA, A.; COELHO, R.; STAA, A. V.; and LUCENA, C. J. P. D. Quantifying the Effects of Aspect-Oriented Programming: A Maintenance Study. **Proceedings of 22nd IEEE International Conference on Software Maintenance (ICSM 2006)**. Philadelphia, Pennsylvania, USA, September 2006, IEEE Computer Society pp. 223-233.

84. KULESZA, U.; SANT'ANNA, C.; and LUCENA, C. Refactoring the Junit Framework Using Aspect-Oriented Programming. **Companion to the 20th annual ACM SIGPLAN conference on Object-oriented programming, systems, languages, and applications**. San Diego, CA, USA, 2005, ACM Press, pp. 136-137.

85. LADDAD, R. **Aspectj in Action: Practical Aspect-Oriented Programming**. 2003: Manning Publications.

86. LAVENDER, R. and SCHMIDT, D. Active Object: An Object Behavioral Pattern for Concurrent Programming, **Pattern Languages of Program Design**. 1996, Addison-Wesley.

87. LOPES, C. D: A Language Framework for Distributed Programming, Phd Thesis, 1997, Northeastern University.

88. LOPEZ-HERREJON, R. E.; BATORY, D.; and COOK, W. Evaluating Support for Features in Advanced Modularization Technologies.

Proceedings of the 19th European Conference on Object-Oriented Programming (ECOOP'05), 2005, Springer-Verlag, pp. 169-194.

89. LOUGRAN, N. and RASHID, A. Framed Aspects: Supporting Variability and Configurability for Aop, **Proceedings of 8th International Conference on Software Reuse, Icsr 2004**. 2004, Springer-Verlag. pp. 127-140.

90. MATTSSON, M. and BOSCH, J. Framework Composition: Problems, Causes, and Solutions, **Building Application Frameworks: Object-Oriented Foundations of Framework Design**. 1999, John Wiley & Sons. pp. 467-487.

91. MATTSSON, M.; BOSCH, J.; and FAYAD, M. E. Framework Integration Problems, Causes, Solutions. **Commun. ACM**, 1999. 42(10): pp. 80-87.

92. MEYER, B. **Object-Oriented Software Construction**. 2nd Edition ed. 2000: Prentice Hall PTR.

93. MEZINI, M. and OSTERMANN, K. Conquering Aspects with Caesar. **Proceedings of the 2nd International Conference on Aspect-oriented Software Development**. Boston, Massachusetts, 2003, ACM Press, pp. 90-99.

94. MEZINI, M. and OSTERMANN, K. Variability Management with Feature-Oriented Programming and Aspects. **Proceedings of the 12th ACM SIGSOFT twelfth international symposium on Foundations of software engineering**. Newport Beach, CA, USA, 2004, ACM Press, pp. 127-136.

95. MITCHELL, T. **Machine Learning**. 1997: McGraw Hill, New York.

96. MONTEIRO, M. P. and FERNANDES, J. M. Towards a Catalog of Aspect-Oriented Refactorings. **Proceedings of the 4th International Conference on Aspect-oriented Software Development**. Chicago, Illinois, 2005, ACM Press, pp. 111-122.

97. OLIVEIRA, T. C. D.; ALENCAR, P. S. C.; FILHO, I. M.; LUCENA, C. J. P. D.; and COWAN, D. D. Software Process Representation and Analysis for Framework Instantiation. **IEEE Trans. Software Eng.** , 2004. 30(3): pp. 145-159.

98. PARNAS, D. L. On the Design and Development of Program Families. **IEEE Transactions on Software Engineering (TSE)**, 1976. 2(1): pp. 1-9.

99. PENCZEK, L. and OLIVEIRA, T. Rdl+Aspects: Uma Linguagem De Processo Para Sistematizar O Reúso De Frameworks Orientados a Aspectos. **III Workshop Brasileiro de Desenvolvimento de Software Orientado a Aspectos (WASP´2006)**. Florianópolis, 2006,

100. POHL, K.; BÖCKLE, G.; and LINDEN, F. J. V. D. **Software Product Line Engineering: Foundations, Principles and Techniques**. 2005: Springer.

101. PRIETO-DIAZ, R. and ARANGO, G. **Domain Analysis and Software Systems Modeling**. 1991: IEEE Computer Society Press.

102. RASHID, A. and CHITCHYAN, R. Persistence as an Aspect.

Proceedings of the 2nd International Conference on Aspect-oriented Software Development. Boston, Massachusetts, 2003, ACM Press, pp. 120-129.

103. RASHID, A.; MOREIRA, A.; and ARAÚJO, J. Modularisation and Composition of Aspectual Requirements, **Proceedings of the 2nd International Conference on Aspect-oriented Software Development**. 2003, ACM Press: Boston, Massachusetts.

104. RIEHLE, D. and GROSS, T. Role Model Based Framework Design and Integration. **Proceedings of the 13th ACM SIGPLAN conference on Object-oriented programming, systems, languages, and applications**. Vancouver, British Columbia, Canada, 1998, ACM Press, pp. 117-133.

105. RUSSELL, S. and NORVIG, P. **Artificial Intelligence: A Modern Approach**. 2nd Edition ed. 2002: Prentice Hall.

106. SANEN, F. Classifying and Documenting Aspect Interactions. **5th AOSD Workshop on Aspects, Components, and Patterns for Infrastructure Software (ACP4IS) at AOSD 2006**. Bonn, Germany, 2006,

107. SANT'ANNA, C.; GARCIA, A.; CHAVEZ, C.; LUCENA, C.; and STAA, A. V. On the Reuse and Maintenance of Aspect-Oriented Software: An Assessment Framework. **Proceedings of the XVII Brazilian Symposium on Software Engineering**. Manaus, Brazil, October 2003,

108. SANTOS, A. L.; LOPES, A.; and KOSKIMIES, K. Framework Specialization Aspects. **Proceedings of the 6th International Conference on Aspect-oriented Software Development**. Vancouver, British Columbia, Canada, 2007, ACM Press, pp. 14-24.

109. SHAVOR, S.; D'ANJOU, J.; FAIRBROTHER, S.; KEHN, D.; KELLERMAN, J.; and MCCARTHY, P. **The Java Developer's Guide to Eclipse**. 2003: Addison-Wesley Professional.

110. SHONLE, M.; LIEBERHERR, K.; and SHAH, A. Xaspects: An Extensible System for Domain-Specific Aspect Languages. **Companion of the 18th annual ACM SIGPLAN conference on Object-oriented programming, systems, languages, and applications**. Anaheim, CA, USA, 2003, ACM Press, pp. 28-37.

111. SMARAGDAKIS, Y. and BATORY, D. Mixin Layers: An Object-Oriented Implementation Technique for Refinements and Collaboration-Based Designs. **ACM Trans. Softw. Eng. Methodol.**, 2002. 11(2): pp. 215-255.

112. SOARES, S. An Aspect-Oriented Implementation Method, Phd Thesis, **Computer Science Department**. 2004, Federal University of Pernambuco.

113. SOARES, S.; LAUREANO, E.; and BORBA, P. Implementing Distribution and Persistence Aspects with Aspectj. **Proceedings of the 17th ACM SIGPLAN conference on Object-oriented programming, systems, languages, and applications**. Seattle, Washington, USA, 2002, ACM Press, pp. 174-190.

114. STAHL, T. and VOELTER, M. **Model-Driven Software Development: Technology, Engineering, Management**. 2006: Wiley.

115. SULLIVAN, K.; GRISWOLD, W. G.; SONG, Y.; CAI, Y.; SHONLE, M.; TEWARI, N.; and RAJAN, H. Information Hiding Interfaces for Aspect-Oriented Design. **Proceedings of the 10th European software engineering conference held jointly with 13th ACM SIGSOFT international symposium on Foundations of software engineering**. Lisbon, Portugal, 2005, ACM Press, pp. 166-175.

116. UBAYASHI, N. and TAMAI, T. Separation of Concerns in Mobile Agent Applications. **Proceedings of the 3rd International Conference Reflection 2001**. Kyoto, Japan, September 2001, Springer, pp. 89-109.

117. WEISS, D. and LAI, C. **Software Product-Line Engineering: A Family-Based Software Development Process**. 1999: Addison-Wesley Professional.

118. ZHANG, C. and JACOBSEN, H.-A. Resolving Feature Convolution in Middleware Systems. **Proceedings of the 19th annual ACM SIGPLAN conference on Object-oriented programming, systems, languages, and applications**. Vancouver, BC, Canada, 2004, ACM Press, pp. 188-205.

Apêndice I
Tradução de Termos

Abaixo é apresentada uma tabela contendo a tradução do inglês para o português de termos que foram utilizados nessa tese.

Termo em Inglês	Tradução para o Português
Advice	Adendo
Aspect	Aspecto
Concern	Interesse
Crosscut	Entrecortar
Crosscutting	Transversal
Crosscutting concern	Interesse transversal
Extension Join Point (EJP)	Ponto de Junção de Extensão
Feature	Característica
Generative	Generative(o)
Inter-type declaration	Declaração intertipo
Join point	Ponto de junção
Obliviousness	Inconsciência
Pointcut	Ponto de corte
Scattering	Espalhamento
Tangling	Entrelaçamento

Apêndice II
Estudo Quantitativo

Esse apêndice apresenta os valores coletados para as versões OO e OA do estudo de composição dos frameworks *Measurement*, GUI, de estatística e persistência.

Classes	CBC	DIT	LOC	LCOO	NOA	WOC
AbstractSensor	0	3	5	-	0	1
ActiveObject	2	3	19	1	1	3
ActuationStrategy	0	1	4	-	0	2
Actuator	1	1	13	0	1	4
ActuatorTableModel	2	4	29	-	0	10
BCActuationStrategy	7	2	32	-	0	2
BCClock	0	1	5	-	0	1
BCMICalculationStrategy	5	2	21	-	0	2
BeerPictureTableModel	1	4	29	-	0	10
BeerProcessingTimeAlgorithm	5	1	36	-	0	2
BeerProcessingTimeStatistic	0	2	15	-	0	3
BeerQualityAlgorithm	2	1	9	-	0	2
BeerQualityStatistic	0	2	15	-	0	3
BlockingQueue	1	1	15	0	1	4
CalculationStrategy	0	1	4	-	0	2
CalibrationStrategy	0	2	5	-	0	2
ClienteUpdateStrategy	0	2	7	-	0	2
ConcreteCalculationStrategy	0	2	7	-	0	2
ConcretePersistence	2	2	19	3	1	3
ConcreteSensor	1	3	6	-	0	1
ConcurrencyStrategy	0	1	4	-	0	2
ConcurrencyStrategyException	0	4	9	-	0	3
DataTableModel	0	3	35	37	2	19
GUIAbstractTableModel	3	3	53	79	2	31
GUIFramework	10	7	97	8	16	6
HWBCActuator	1	2	7	-	0	1
HWBCCamera	6	2	37	1	2	3
HWBCMeasurementGUI	7	2	41	15	1	9
HWBCTrigger	4	2	29	3	2	8
ItemFactory	2	1	38	4	3	10
ItemProcessingTime	1	1	27	3	2	8
MICalculationStrategy	2	2	11	-	0	2
Main	13	1	57	-	0	2
MeasurementApplication	6	8	33	3	1	4
MeasurementEntity	1	1	10	0	1	3
MeasurementGUIFacade	8	1	81	31	2	18

MeasurementGUIStatisticFacade	11	1	86	43	3	14
MeasurementItem	6	2	52	18	4	17
MeasurementValue	1	2	34	10	3	12
ObjectDAO	1	1	9	-	0	8
OnChangeUpdateStrategy	1	2	10	-	0	2
PeriodicUpdateStrategy	0	2	7	-	0	2
PersistenceFacade	4	1	23	0	1	7
PersistencyFrameworkFacade	3	1	52	24	2	19
PhysicalActuator	0	1	4	-	0	1
PhysicalSensor	1	1	12	4	1	5
Picture	1	1	23	0	1	7
ProcessedItemDAO	2	2	20	-	0	8
ProcessingTimeStatisticDAO	2	2	20	-	0	8
ProcessingTimeTableModel	0	4	17	-	0	4
Sensor	0	1	23	3	2	10
Sensor	2	2	26	11	3	10
SensorTableModel	1	4	31	-	0	10
Statistic	2	1	20	9	1	9
StatisticAlgorithm	2	1	5	-	0	2
StatisticFrameworkFacade	9	1	110	21	6	23
ThreadId	0	1	3	-	0	0
ThreadPerRequestStrategy	0	1	8	-	0	3
ThreadPoolStrategy	2	3	41	0	5	6
Trigger	2	4	15	0	1	4
TriggerTableModel	2	4	29	-	0	10
UpdateStrategy	0	1	4	-	0	2
Total	148	128	1548	331	71	393

Tabela 22. Valores Coletados para Métricas – Versão OO

Classes	CBC	DIT	LOC	LCOO	NOA	WOC
AbstractSensor	0	3	5	-	0	1
ActiveObject	2	3	19	1	1	3
ActuationStrategy	0	1	4	-	0	2
Actuator	1	1	13	0	1	4
ActuatorTableModel	2	4	29	-	0	10
BCActuationStrategy	6	2	30	-	0	2
BCClock	0	1	5	-	0	1
BCMICalculationStrategy	5	2	21	-	0	2
BeerPictureTableModel	1	4	29	-	0	10
BeerProcessingTimeAlgorithm	5	1	36	-	0	2
BeerProcessingTimeStatistic	0	2	15	-	0	3
BeerQualityAlgorithm	2	1	9	-	0	2
BeerQualityStatistic	0	2	15	-	0	3
BlockingQueue	1	1	15	0	1	4
CalculationStrategy	0	1	4	-	0	2
CalibrationStrategy	0	2	5	-	0	2
ClienteUpdateStrategy	0	2	7	-	0	2
ConcreteCalculationStrategy	0	2	7	-	0	2
ConcreteSensor	1	3	6	-	0	1
ConcurrencyStrategy	0	1	4	-	0	2
ConcurrencyStrategyException	0	4	9	-	0	3
DataTableModel	0	3	35	37	2	19
GUIAbstractTableModel	1	3	51	79	2	31
GUIFramework	10	7	97	8	16	6
HWBCActuator	1	2	7	-	0	1
HWBCCamera	5	2	35	1	2	3
HWBCTrigger	3	2	27	3	2	8
ItemFactory	2	1	38	4	3	10
ItemProcessingTime	1	1	27	3	2	8
MICalculationStrategy	2	2	11	-	0	2
Main	11	1	53	-	0	2
MeasurementApplication	4	8	29	3	1	4
MeasurementEntity	1	1	10	0	1	3
MeasurementItem	6	2	52	18	4	17
MeasurementValue	1	2	34	10	3	12
ObjectDAO	1	1	9	-	0	8
OnChangeUpdateStrategy	1	2	10	-	0	2
PeriodicUpdateStrategy	0	2	7	-	0	2
PersistencyFrameworkFacade	3	1	52	24	2	19
PhysicalActuator	0	1	4	-	0	1
PhysicalSensor	1	1	12	4	1	5
Picture	1	1	23	0	1	7
ProcessedItemDAO	2	2	20	-	0	8
ProcessingTimeStatisticDAO	2	2	20	-	0	8
ProcessingTimeTableModel	0	4	17	-	0	4
Sensor	0	1	23	3	2	10
Sensor	2	2	26	11	3	10
SensorTableModel	1	4	31	-	0	10
Statistic	2	1	20	9	1	9
StatisticAlgorithm	2	1	5	-	0	2

StatisticFrameworkFacade	7	1	108	21	6	23
ThreadId	0	1	3	-	0	0
ThreadPerRequestStrategy	0	1	8	-	0	3
ThreadPoolStrategy	2	3	41	0	5	6
Trigger	1	4	13	0	1	4
TriggerTableModel	2	4	29	-	0	10
UpdateStrategy	0	1	4	-	0	2
Aspectos	**CBC**	**DIT**	**LOC**	**LCOO**	**NOA**	**WOC**
BeerCanMeasurementGUIAspect	9	2	36	6	0	7
MeasurementGUIAspect	14	1	87	31	2	19
MeasurementGUIStatisticAspect	16	1	82	26	0	12
GUIEvents	4	1	15	-	0	0
MeasurementEvents	4	1	16	-	0	0
PersistenceAspect	6	1	30	0	1	7
BeerCanPersistenceAspect	4	2	12	-	0	1
StatisticEvents	2	1	7	-	0	0
Total	163	131	1563	302	66	388

Tabela 23. Valores Coletados para Métricas – Versão OA