

# Curriculum Vitae

## Dr. Filipe Rolim Cordeiro

### PROFESSIONAL ADDRESS

Departamento de Computação  
Universidade Federal Rural de Pernambuco  
Rua Dom Manoel de Medeiros, s/n, Dois Irmãos - CEP: 52171-900 - Recife/PE – Brazil.  
Email: [filipe.rolim@ufrpe.br](mailto:filipe.rolim@ufrpe.br) / [filipe.rolim@gmail.com](mailto:filipe.rolim@gmail.com)

### RESEARCH INTEREST

- Computer Vision
- Medical Image Analysis
- Deep Learning
- Multiobjective Optimization
- Meta Learning

### EDUCATION

#### **Ph.D. in Computer Science, Federal University of Pernambuco – Recife, Brazil (2011-2015).**

Title: Development of a Semi-Supervised Algorithm to Segment Lesions in Mammography Images

Thesis advisors: Prof. Dr. Abel Guilhermino da Silva-Filho and Dr. Wellington Pinheiro dos Santos

#### **M.Sc. in Computer Science, Federal University of Pernambuco – Recife, Brazil (2009-2011).**

Title: Analysis of Multiobjective Techniques to Tuning Cache Memory Hierarchy aiming Energy Reduction and High Performance

Thesis advisor: Prof. Dr. Abel Guilhermino da Silva-Filho

#### **B.Sc. in Computer Science, University of Pernambuco – Recife, Brazil (2004-2008).**

### PROFESSIONAL EXPERIENCE

#### **Assistant Professor at Federal Rural University of Pernambuco (2013-present)**

- Teaching subjects related to artificial intelligence and computer vision;
- Professor at postgraduate;
- Supervision of master and graduation students;

#### **Journal Reviewer**

- Applied Soft Computing
- Expert Systems with Applications
- Biomedical Signal Processing and Control
- Sage Open Medicine
- Informatics in Medicine Unlocked

## M.SC. SUPERVISION

Sergio Fernandovitch Chevtchenko

Title: A Convolutional Neural Network with Feature Fusion for Real-Time Hand Posture Recognition.

Universidade Federal Rural de Pernambuco (2017-2018)

Jéssica Barbosa Diniz

Title: Multiobjective Optimization of Deep Learning Parameters to Classify Melanoma in Dermatoscopy Images.

Universidade Federal Rural de Pernambuco (2017-today)

Felipe Oliveira

Title: Segmentation of Masses in Mammography Images Using Interest Point Detectors.

Universidade Federal Rural de Pernambuco (2017-today)

Charles Nicollas

Title: Development of an Automatic Food Recognition System to Help in Nutritional Monitoring.

Universidade Federal Rural de Pernambuco (2018-today)

## LIST OF PUBLICATIONS

### Journal Papers

1. Filipe R. Cordeiro; Wellington P. Santos; Abel G. Silva-Filho. **Analysis of supervised and semi-supervised GrowCut applied to segmentation of masses in mammography images.** Computer Methods in Biomechanics and Biomedical Engineering, v. 1, p. 1-19, 2017.
2. Filipe R. Cordeiro; Abel G. Silva-Filho; Wellington P. Santos. **A Semi-Supervised Fuzzy GrowCut Algorithm to Segment and Classify Regions of Interest of Mammographic Images.** Expert Systems with Applications, v. 65, p. 116-126, 2016.
3. Filipe R. Cordeiro; Wellington P. Santos; Abel G. Silva-Filho. **An adaptive semi-supervised Fuzzy GrowCut algorithm to segment masses of regions of interest of mammographic images.** Applied Soft Computing, v. 46, p. 613-628, 2016.
4. Filipe R. Cordeiro; Abel G. Silva-Filho. **Multi-objective optimization applied to unified second level cache memory hierarchy tuning aiming at energy and performance optimization.** Applied Soft Computing (Print), v. 49, p. 603-610, 2016.
5. Filipe R. Cordeiro; Wellington P. Santos; A. G. Silva-Filho. **Segmentation of Mammography by Applying GrowCut for Mass Detection.** Studies in Health Technology and Informatics, v. 192, p. 87-91, 2013.

6. Abel G. Silva-Filho; Filipe R. Cordeiro. **A Combined Optimization Method for Tuning Two-Level Memory Hierarchy Considering Energy Consumption.** EURASIP Journal on Embedded Systems, v. 2011, p. 1-12, 2011.
7. Abel G. Silva-Filho; Filipe R. Cordeiro; Cristiano C. Araújo; Adriano Sarmiento; Millena Gomes; Edna Barros; Manoel E. Lima. **An ESL Approach for Energy Consumption Analysis of Cache Memories in SoC Platforms.** International Journal of Reconfigurable Computing (Print), v. 2011, p. 1-12, 2011.

## Book Chapters

8. Henrique F. Lacerda; Allan R. S. Feitosa; Abel G. Silva-Filho; Wellington P. Santos; Filipe R. Cordeiro. **SmartHome Energy Saving Using a Multi-objective Approach Based on Appliances Usage Profiles.** Lecture Notes in Computer Science. 1ed.: Springer International Publishing, 2017, p. 142-147.

## Refereed Conference Papers

9. Allan R. S. Feitosa; Henrique F. Lacerda; Abel. G. Silva-Filho; Wellington P. Santos; Filipe R. Cordeiro. **Using Binary Multi Objective Particle Swarm Optimization for energy-saving in Smart Home environments.** In: 9th International Conference on Electronics, Computers and Artificial Intelligence ECAI 2017, 2017.
10. Filipe R. Cordeiro; Kallebe F. P. Bezerra; Wellington P. Santos. **Random Walker with Fuzzy Initialization Applied to Segment Masses in Mammography Images.** In: 30th IEEE International Symposium on Computer-Based Medical Systems - CBMS 2017, 2017, Thessaloniki.
11. Jéssica B. Diniz; Filipe R. Cordeiro. **Automatic Segmentation of Melanoma in Dermoscopy Images using Fuzzy Numbers.** In: 30th IEEE International Symposium on Computer-Based Medical Systems - CBMS 2017, 2017, Thessaloniki.
12. Luís D. R. França; Péricles B. C. Miranda; Filipe R. Cordeiro. **Um Estudo Experimental da Aplicação do Algoritmo de Neuroevolução com Crescimento Topológico em Imagens Médicas.** In: ENIAC, 2017, Uberlândia. XIV Encontro Nacional de Inteligência Artificial e Computacional, 2017.
13. Maria F. S. Andrade; Filipe R. Cordeiro; Fabiana F. Lima; Suy F. Hwang; Jullyane C. G. Mendonça. **Uma abordagem Fuzzy-Adaptativa para Segmentação de Imagens de Cromossomos.** In: ENIAC, 2017, Uberlândia. XIV Encontro Nacional de Inteligência Artificial e Computacional, 2017.
14. Rafaella L. Silva; Sérgio Chevtchenko; Valmir M. Filho; Filipe R. Cordeiro. **People Detection from Beach Images.** In: IEEE International Conference on Tools with Artificial Intelligence (ICTAI), 2017, Boston. IEEE International Conference on Tools with Artificial Intelligence (ICTAI), 2017.

15. Rafaella L. Silva; Sérgio Chevtchenko; Valmir M. Filho; Filipe R. Cordeiro. **A Study of Swimmers Detection in Beach Images**. In: XIII Workshop de Visão Computacional, 2017, Natal. XIII Workshop de Visão Computacional, 2017.
16. Allan L. Jesus; Valmir M. Filho; Filipe R. Cordeiro; Fabiana F. Lima; Suy F. Hwang; Jullyane C. G. Mendonça. **Binarization Algorithms Applied to Chromosomes Image Segmentation**. In: XIII Workshop de Visão Computacional (WCV), 2017, Natal.
17. Euclides C. P. Neto; D. Carvalho; George G. Cabral; Filipe R. Cordeiro; Rafael Mello; Gustavo Callou. **Identifying Marijuana Users Using Text Mining Techniques**. In: XIII Encontro Nacional de Inteligência Artificial e Computacional (ENIAC 2016), 2016.
18. Henrique F. Lacerda; Allan R. S. Feitosa; Abel G. Silva-Filho; Wellington P. Santos; Filipe R. Cordeiro. **Redução de Energia em Casas Inteligentes utilizando uma Abordagem Multiobjetivo baseada nos Perfis de Uso de Equipamentos**. In: VI Brazilian Symposium on Computing Systems Engineering (SBESC), 2016, João Pessoa.
19. Washington W. Azevedo; Sidney M. L. Lima; Isabella M. M. Fernandes; Arthur D. D. Rocha; Filipe R. Cordeiro; Abel G. Silva-Filho; Wellington P. Santos. **Fuzzy Morphological Extreme Learning Machines to detect and classify masses in mammograms**. In: 2015 IEEE International Conference on Fuzzy Systems (FUZZ-IEEE), 2015. p. 1.
20. Washington W. Azevedo; Sidney M. L. Lima; Isabella M. M. Fernandes; Arthur D. D. Rocha; Filipe R. Cordeiro; Abel G. Silva Filho; Wellington P. Santos. **Morphological extreme learning machines applied to detect and classify masses in mammograms**. In: 2015 International Joint Conference on Neural Networks (IJCNN), 2015, Killarney. p. 1.
21. Vitor Rolim; Filipe R. Cordeiro; Rafael Mello. **Reconhecimento de Padrões Aplicados a Comentários de Fóruns Educacionais**. In: Encontro Nacional de Inteligência Artificial e Computacional (ENIAC), 2014, São Carlos, SP. ENIAC 2014, 2014.
22. Filipe R. Cordeiro; Sidney M. L. Lima; Abel G. Silva-Filho; Wellington P. Santos. **Segmentation of Mammography by Applying Extreme Learning Machine in Tumor Detection**. In: IDEAL 2012, 2012, Natal. Conferência Internacional em Engenharia Inteligente de Dados e Aprendizagem Automática (IDEAL), 2012.
23. Filipe R. Cordeiro; Abel G. Silva-Filho. **Análise de Técnicas de Otimização Multiobjetivo para Ajustar Hierarquia de Memória visando Economia de Consumo de Energia e Desempenho**. In: XIII Simpósio em Sistemas Computacionais - WSCAD 2012, 2012.
24. Abel G. Silva-Filho; Filipe R. Cordeiro. **DoE applied to Two-Level Memory Hierarchies for Energy Consumption Reduction**. In: IEEE International Conference on Systems, Man, and Cybernetics, 2011, Alaska. p. 3084-3089.

25. Filipe R. Cordeiro; Abel G. Silva-Filho; Cristiano C. Araujo; Millena Almeida; Edna N. S. Barros; Manoel E. Lima. **An Environment for Energy Consumption Analysis of Cache Memories in SOC Platforms**. In: Southern Programmable Logic Conference, 2010, Porto de Galinhas. VI Southern Programmable Logic Conference. Recife: Editora Universitária UFPE, 2010. v. 1. p. 35-40.
26. Filipe R. Cordeiro; Marcel Caraciolo; Leopoldo P. Ferreira; Abel G. Silva-Filho. **Ajuste de Hierarquia de Memória para Redução de Consumo de Energia com base em Otimização por Enxame de Partículas (PSO)**. In: Designer Forum 2010, 2010, Porto de Galinhas. 2010. v. 1. p. 69-74.
27. Filipe R. Cordeiro; Abel G. Silva-Filho. Gilliano R. Carvalho. **MOPSO applied to Architecture Tuning with Unified Second-Level Cache for Energy and Performance Optimization**. In: SBAC-PAD 2010, 2010, Petrópolis, RJ. 22nd International Symposium on Computer Architecture And High Performance Computing, 2010.
28. Filipe R. Cordeiro; Abel G. Silva-Filho. **NSGAI Applied to Unified Second Level Cache Memory Hierarchy Tuning Aiming Energy and Performance Optimization**. In: WSCAD-SSC 2010, 2010, Petrópolis, RJ. XI Simpósio em Sistemas Computacionais, 2010.
29. Filipe R. Cordeiro; Abel G. Silva-Filho. **A New Low Power Exploration Mechanism based on Design of Experiments (DOE) and Two-Level Hierarchies**. In: SFORUM, 2009, Natal. 9th Microeletronics Students Forum, 2009.
30. Gilliano R. Carvalho; A. H. C. B. S. Araujo; Filipe R. Cordeiro; Abel G. Silva-Filho. **Análise de Consumo de Energia para Hierarquias de Memória com 2 Níveis**. In: WSCAD-WIC 2009, 2009, São Paulo.
31. Abel G. Silva-Filho; Carmelo J. A. Bastos-Filho; Davi M. A. Falcao; Filipe R. Cordeiro; Rodrigo M C. S. Castro. **An Optimization Mechanism Intended for Two-Level Cache Hierarchy to Improve Energy and Performance using the NSGAI Algorithm**. In: SBAC-PAD, 2008, Campo Grande. 20th International Symposium on Computer Architecture and High Performance Computing, 2008.
32. Abel G. Silva-Filho; Carmelo J. A. Bastos-Filho; Rodrigo M. F. Lima; Filipe R. Cordeiro. Davi M. A. Falcao; Manoel A. Lima. **An Intelligent Mechanism to Explore a Two-Level Cache Hierarchy Considering Energy Consumption and Time Performance**. In: SBAC-PAD 2007, 2007, Gramado. IEEE Computer Society, 2007. v. 1. p. 177-184.
33. Abel G. Silva-Filho; Filipe R. Cordeiro; R. E. Sant'anna; Manoel E. Lima. **Heuristic for Two-Level Cache Hierarchy Exploration Considering Energy Consumption and Performance**. In: 16th International Workshop Power and Timing Modeling, Optimization and Simulation, 2006, Montpellier. Integrated Circuits and System Design Power and Timing Modeling, Optimization and Simulation. Berlin: Springer, 2006. v. 4148. p. 75-83.