Referências Bibliográficas

[Alpert07] ALPERT, S.; GALUN, M.; BASRI, R.; BRANDT, A.. **Image segmentation by probabilistic bottom-up aggregation and cue integration**. IEEE Conference on Computer Vision and Pattern Recognition (CVPR). Minneapolis, June 2007.

[Baatz00] BAATZ, M.; SCHÄPE, A.. **Multiresolution Segmentation – An Optimization Approach for High Quality Multi-scale Image Segmentation**. In: Strobl/Blaschke/Griesebner (editors): Angewandte Geographische Informationsverarbeitung XII, Wichmann-Verlag, Heidelberg, pp. 12-23, 2000.

[Baig08] BAIG, A.; BOURIDANE, A.; KURUGOLLU, F.. **A Corner Strength Based Fingerprint Segmentation Algorithm with Dynamic Thresholding**. Pattern Recognition, 2008. ICPR 2008. 19th International Conference on, vol., no., pp.1-4, 8-11 Dec. 2008.

[Binis96] BINIS, L. S.; FONSECA, L. M. G.; ERTHAL, G. J.; II, F. M.. **Satellite Imagery Segmentation: a region growing approach**. Anais VIII Simpósio Brasileiro de Sensoriamento Remoto, Salvador, Brasil, 14-19 abril 1996, INPE, p. 677-680.

[Blaschke01] BLASCHKE, T.; STROBL, J.. **What is Wrong with Pixels? Some Recent Developments Interfacing Remote Sensing and GIS**. GISZeitschrift für Geoinformationssysteme, 6 (2001), pp. 12-17.

[Blaschke08] BLASCHKE, T.; LANG, S.; HAY, G. (Eds.). **Object-based Image Analysis – Spatial Concepts for Knowledge-Driven Remote Sensing Applications**. Series: Lecture Notes in Geoinformation and Cartography, 2008, XVIII, 818 p. 304 illus.

[Brodský06] BRODSKÝ, L.; BORŮVKA, L.. **Object-oriented Fuzzy Analysis of Remote Sensing Data for Bare Soil Brightness Mapping**. Soil & Water Res., 1, 2006 (3): 79–84.

[Câmara08] CÂMARA, G.; VINHAS, L.; FERREIRA, K. R.; QUEIROZ, G. R.; SOUZA, R. C. M.; MONTEIRO, A. M. V.; CARVALHO, M. T.; CASANOVA, M. A.; FREITAS, U. M.. **TerraLib: An Open Source GIS Library for Large-scale Environmental and Socio-economic Applications**. G. Brent Hall (ed), "Open Source Approaches to Spatial Data Handling" Berlin, Springer-Verlag, 2008.

[Comaniciu02] COMANICIU, D.; MEER, P.. **Mean Shift: A Robust Approach Toward Feature Space Analysis**. IEE Transactions on Pattern Analysis and Machine Intelligence, vol. 24, no. 5, May 2002.

[Du02] DU, E. Y.; CHANG, C; THOUIN, P. D.. **Thresholding Video Images for Text Detection**. Pattern Recognition, 2002. Proceedings. 16th International Conference on, vol.3, no., pp. 919- 922 vol.3, 2002.

[Du09] DU, Y.; THOMAS, N. L.; ARSLANTURK, E.. **Multi-level iris video image thresholding**. Computational Intelligence in Biometrics: Theory, Algorithms, and Applications, 2009. CIB 2009. IEEE Workshop on, vol., no., pp.38-45, March 30 2009-April 2 2009.

[Darwin03] DARWIN, C.; CARROLL, J.. **On the Origin of Species**. Broadview Press, 2003.

[Dennis91] DENNIS, J. E.; TORCZON, V.. **Direct Search Methods on Parallel Machines**. SIAM J. Optimization, 1 (1991), pp 448-474.

[Dennis94] DENNIS J. E.; TORCZON, V.. **Derivative-free Pattern Search Methods for Multidisciplinary Design Problems**. Proceedings of the 5th

AIAA/NASA/USAF/ISSMO Symposium on Multidisciplinary Analysis and Optimization, Panama City, Florida, September 7-9, 1994.

[Feitosa06] FEITOSA, R. Q.; COSTA, G. A.; CAZES, T. B.; FEIJÓ, B.. **A Genetic Approach for the Automatic Adaptation of Segmentation Parameters**. International Conference on Object-based Image Analysis – ISPRS Proceedings, v. 36, n. 4/C42, 2006.

[Fredrich08] FREDRICH, C. M. B.; FEITOSA, R. Q.. **Automatic Adaptation of Segmentation Parameters Applied to Inhomogeneous Objects Detection**. Calgary. GEOBIA – Geo-Object Based Image Analysis Conference – Proceedings, 2008.

[Gerig01] GERIG, M.; CHAKOS, M. VALMET. **A New Validation Tool for Assessing and Improving 3D Object Segmentation**. MICCAI 2001, Springer, Berlin, 2001, 516-523.

[Gomes05] GOMES, O. F. M.; PACIORNIK, S.. **Automatic Classification of Graphite in Cast Iron**. Microscopy and Microanalysis, v. 11, p. 363-371, 2005.

[Gonzalez07] GONZALEZ, R. G.; WOODS, R. E.. **Digital Image Processing**. 3rd Edition, Prentice Hall, 2007.

[Haralick85] HARALICK, R. M.; SHAPIRO, L. G.. **Image Segmentation Techniques**. CVGIP 29, 100-132, 1985.

[Heimann07] HEIMANN, T.; STYNER, M.; VAN GINNEKEN B.. **3D Segmentation in the Clinic: A Grand Challenge**. 3D Segmentation in the Clinic: A Grand Challenge, p. 7–15, 2007.

[Hooke61] HOOKE, R.; JEEVES, T. A.. **"Direct Search" Solution of Numerical and Statistical Problems**. J. Assoc. Comput. Mach., 8, (1961), pp. 212-229.

[Janssen95] JANSSEN, L.; MOLENAAR, M.. **Terrain Objects, their Dynamics and their Monitoring by the Integration of GIS and Remote Sensing**. IEEE Transactions on Geoscience and Remote Sensing 33, 749-758, 1995.

[Kulpa77] KULPA, Z.. **Area and Perimeter Measurement of Blobs in Discrete Binary Pictures**. Omput. Graph. Image Process. 6 (1977) 434-451.

[Mathworks11] **MathWorks - MATLAB and Simulink for Technical Computing**. Disponível em <http://www.mathworks.com/> (Último acesso em fevereiro de 2011).

[Meinel04] MEINEL, G.; NEUBERT, M.. **A Comparison of segmentation programs for high resolution remote sensing data**. Proceedings XXth ISPRS Congress, Istanbul, 14-23. July 2004, International Archives of Photogrammetry, Remote Sensing and Spatial Information Sciences, Vol. XXXV-B4, p. 1097-1102 (ISSN 1682-1750).

[Michalewicz96] MICHALEWICZ, Z.. **Genetic Algorithms + Data Structures = Evolution Programs**. Springer, 1996.

[Neave88] NEAVE H. R; WORTHINGTON P. L.. **Distribution-Free Tests**. Unwin Hyman, London, 1988.

[Neubert06] NEUBERT, M.; HEROLD, H; MEINEL, G.. **Evaluation of Remote Sensing Image Segmen-tation Quality – Further Results and Concepts**. – In: Lang, S.; Blaschke, T. & Schöpfer, E. (Eds.): Proceedings 1st International Conference on Object-based Image Analysis (OBIA 2006), 4.-5. July 2006 Salzburg, International Archives of Photogrammetry, Remote Sensing and Spatial Information Sciences, Vol. XXXVI-4/C42, 6 p., CD-ROM. (ISSN 1682-1777).

[Neubert08] NEUBERT, M.; HEROLD, H.; MEINEL, G.. **Assessment of Remote Sensing Image Segmentation Quality**. Proceedings GEOBIA 2008, Calgary, Canada, August, 6-7, 2008, International Archives of Photogrammetry,

Remote Sensing and Spatial Information Sciences, Vol. XXXVIII-4/C1, 5 p. (ISSN: 1682-1777).

[Nokia11] **Products - Qt - A Cross-platform Application and UI Framework**. Disponível em <http://qt.nokia.com/products> (Último acesso em fevereiro de 2011).

[Pedrini08] PEDRINI, H.; SCHWARTZ, W.. **Análise de Imagens Digitais: Princípios, Algoritmos e Aplicações**. Thomson Learning, São Paulo, 2008.

[Prokop92] PROKOP, R. J.; REEVES, A. P.. **A Survey of Moment-based Techniques for Unoccluded Object Representation and Recognition**. CVGIP: Graphical Models and Image Processing 54 (1992) 438-460.

[Russ98] RUSS, J. C.. **The Image Processing Handbook** - 3rd ed. Materials Science and Engineering Department North Carolina State University Raleigh - North Carolina, 1998.

[Sezgin00] SEZGIN, M.; TASALTIN, R.. **A New Dichotomization Technique to Multilevel Thresholding Devoted to Inspection Applications**. Pattern Recogn. Lett. 21, 151–161 (2000).

[Sezgin01] SEZGIN, M.; SANKUR, B.. **Comparison of Thresholding Methods for Non-destructive Testing Applications**. IEEE ICIP'2001, Intl. Conf. Image Process., pp. 764 –767 (2001).

[Song09] SONG, X.; LI, D.; GU, H.; LIAO, Y.; REN, D.. **Insights into Performance of Pattern Search Algorithms for High-frequency Surface Wave Analysis**. Computers & Geosciences 35 (2009) 1603–1619.

[Stroustrup97] STROUSTRUP, B.. **The C++ Programming Language (3rd edition)**. Addison Wesley, 1997.

[Tilton89] TILTON, J. C.. **Image Segmentation by Iterative Parallel Region Growing and Splitting**. Proc. 1989 Int. Remote Sensing Symp., Vancouver, BC, Canada, July 10-14, pp. 2420-2423, 1989.

[Torczon97] TORCZON, V.. **On the Convergence of Pattern Search Algorithms**. SIAM Journal on Optimization, Vol. 7, Issue 1, pages 1-25, February 1997.

[Yu-gian06] YU-GIAN, Z.; WEI-HUA, G.; ZHEN-CHENG, C.; JING-TIAN, T.; LING-YUN, L.. **Medical Images Edge Detection Based on Mathematical Morphology**. Engineering in Medicine and Biology Society, 2005. IEEE-EMBS 2005. 27th Annual International Conference of the , vol., no., pp.6492-6495, 17-18 Jan. 2006.

[Yu04] YU, Y.; ACTON, S. T.. **Edge detection in ultrasound imagery using the instantaneous coefficient of variation**. Image Processing, IEEE Transactions on , vol.13, no.12, pp.1640-1655, Dec. 2004.

[Zhang94] ZHANG, Y. J.; GERBRANDS, J. J.. **Objective and Quantitative Segmentation Evaluation and Comparison**. Sign. Process. 39, 43-54 (1994).

[Zhang96] ZHANG, Y. J.. **A Survey on Evaluation Methods for Image Segmentation**. PR, 29 (8): 1335-1346, 1996.

[Zhang01] ZHANG, Y. J.. **A review of Recent Evalutaion Methods for Image Segmentation**. International Symposium on Signal Processing and its Applications (ISSPA), Kuala Lumpur, Malaysia, 13-16 August, 2001.

[Zhang10] ZHANG, J.. **Edge Detection in Glass Fragmentation Images Based on One Order Differential Operator**. Computer Engineering and Applications (ICCEA), 2010 Second International Conference on , vol.2, no., pp.591-594, 19-21 March 2010.

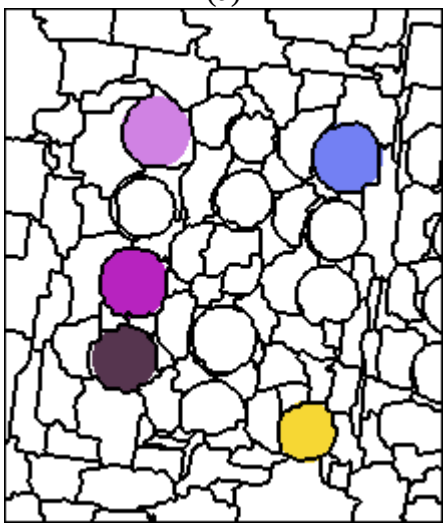
Apêndice A

Neste apêndice são mostrados os resultados das segmentações que não foram mostrados no texto.

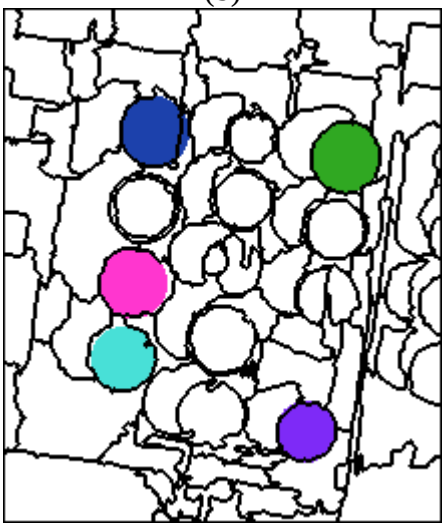
Refinaria

(a)

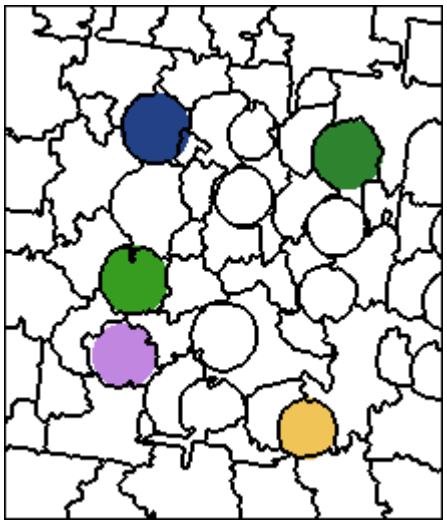
(b)



(c)



(d)

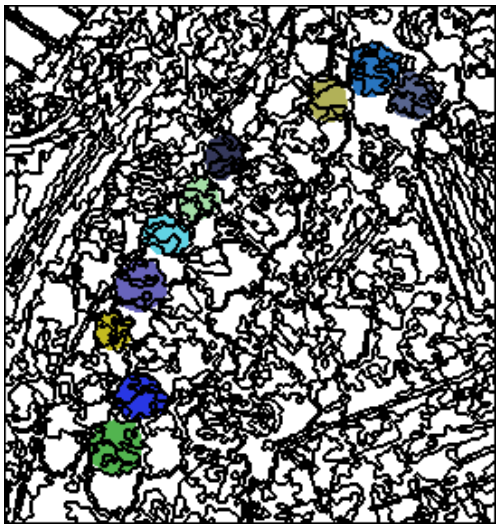


(e)

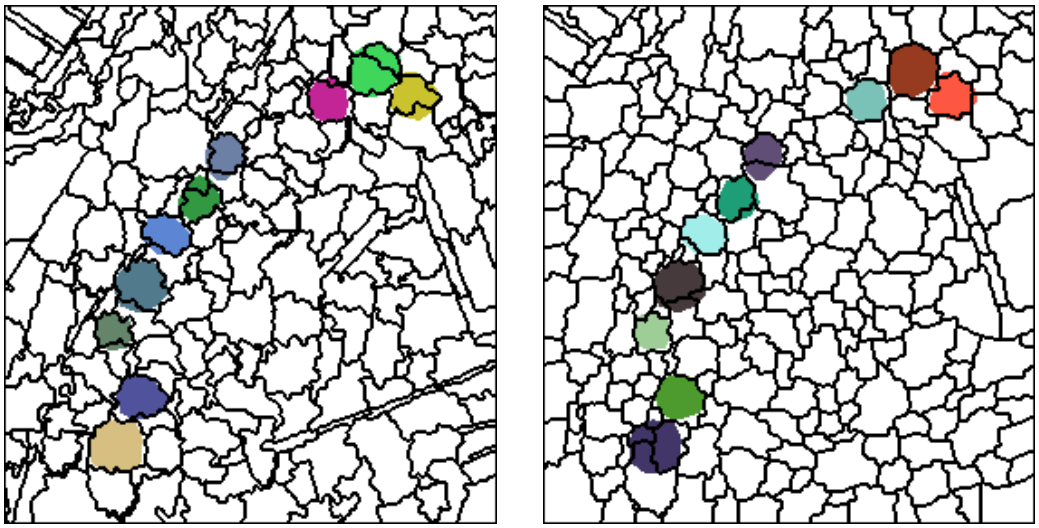
Figura A.1: (a) Imagem original e (b) segmentação baseada apenas na cor. As imagens (c), (d) e (e) apresentam as segmentações com os três atributos de forma que obtiveram melhor desempenho: Compacidade, Fator de Forma Circular e Roundness.

Árvores

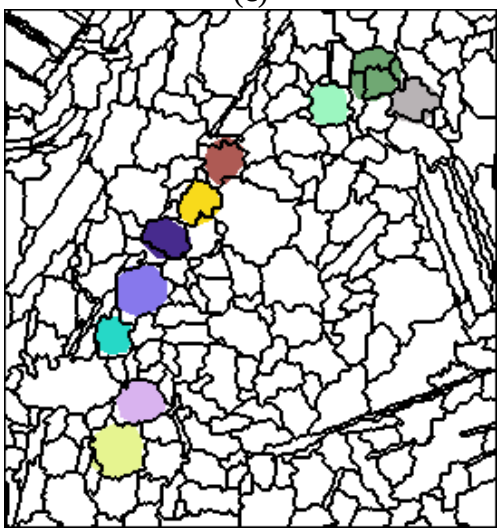
(a)



(b)



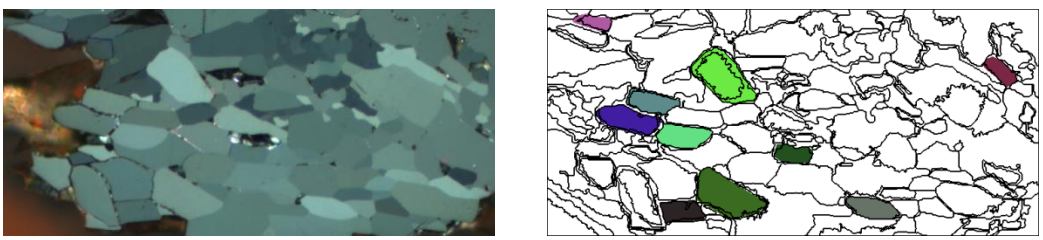
(c) (d)



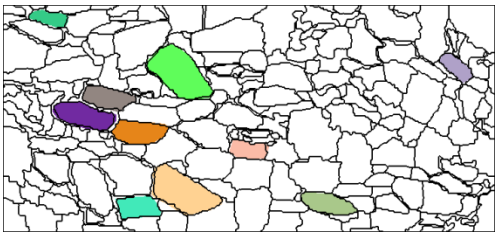
(e)

Figura A.2: (a) Imagem original e (b) segmentação baseada apenas na cor. As imagens (c), (d) e (e) apresentam as segmentações com os três atributos de forma que obtiveram melhor desempenho: Fator de Forma Circular, Compacidade e Bulkiness.

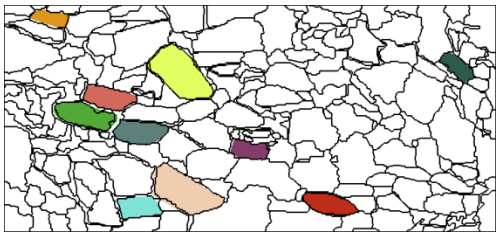
Lamelar



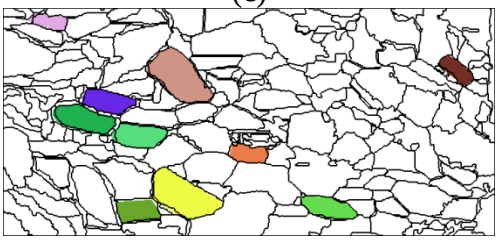
(a) (b)



(c)



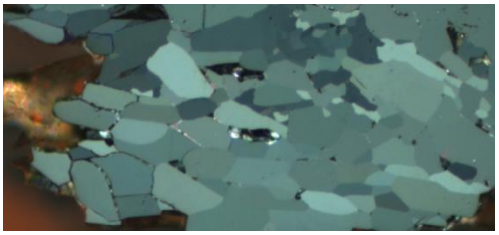
(d)



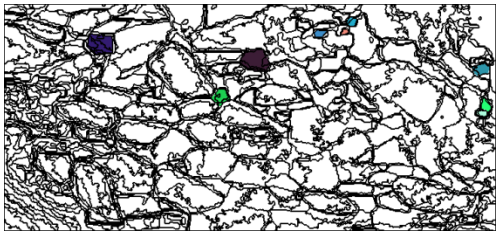
(e)

Figura A.3: (a) Imagem original e (b) segmentação baseada apenas na cor. As imagens (c), (d) e (e) apresentam as segmentações com os três atributos de forma que obtiveram melhor desempenho: Compacidade, Fator de Forma Circular e Bulkiness.

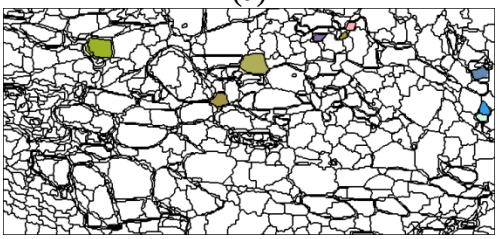
Granular



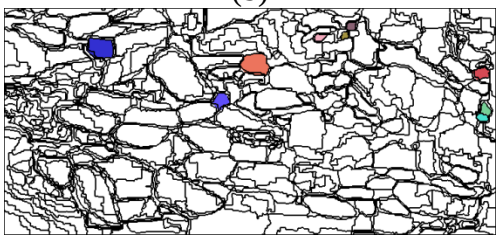
(a)



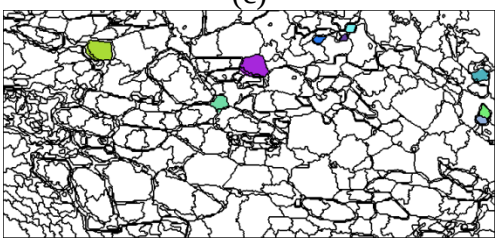
(b)



(c)



(d)



(e)

Figura A.4: (a) Imagem original e (b) segmentação baseada apenas na cor. As imagens (c), (d) e (e) apresentam as segmentações com os três atributos de forma

que obtiveram melhor desempenho: Fator de Forma Circular, Suavidade e Roundness.

Falange Média

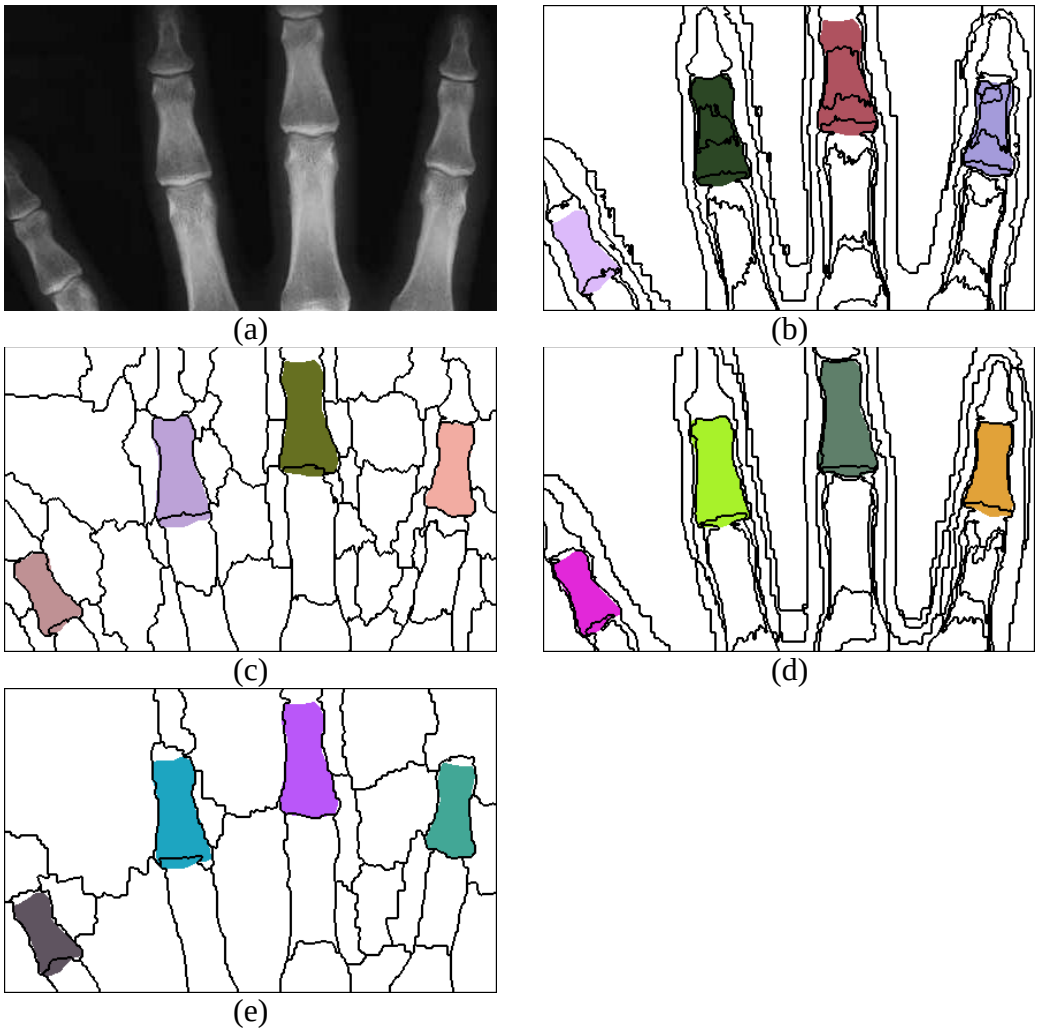
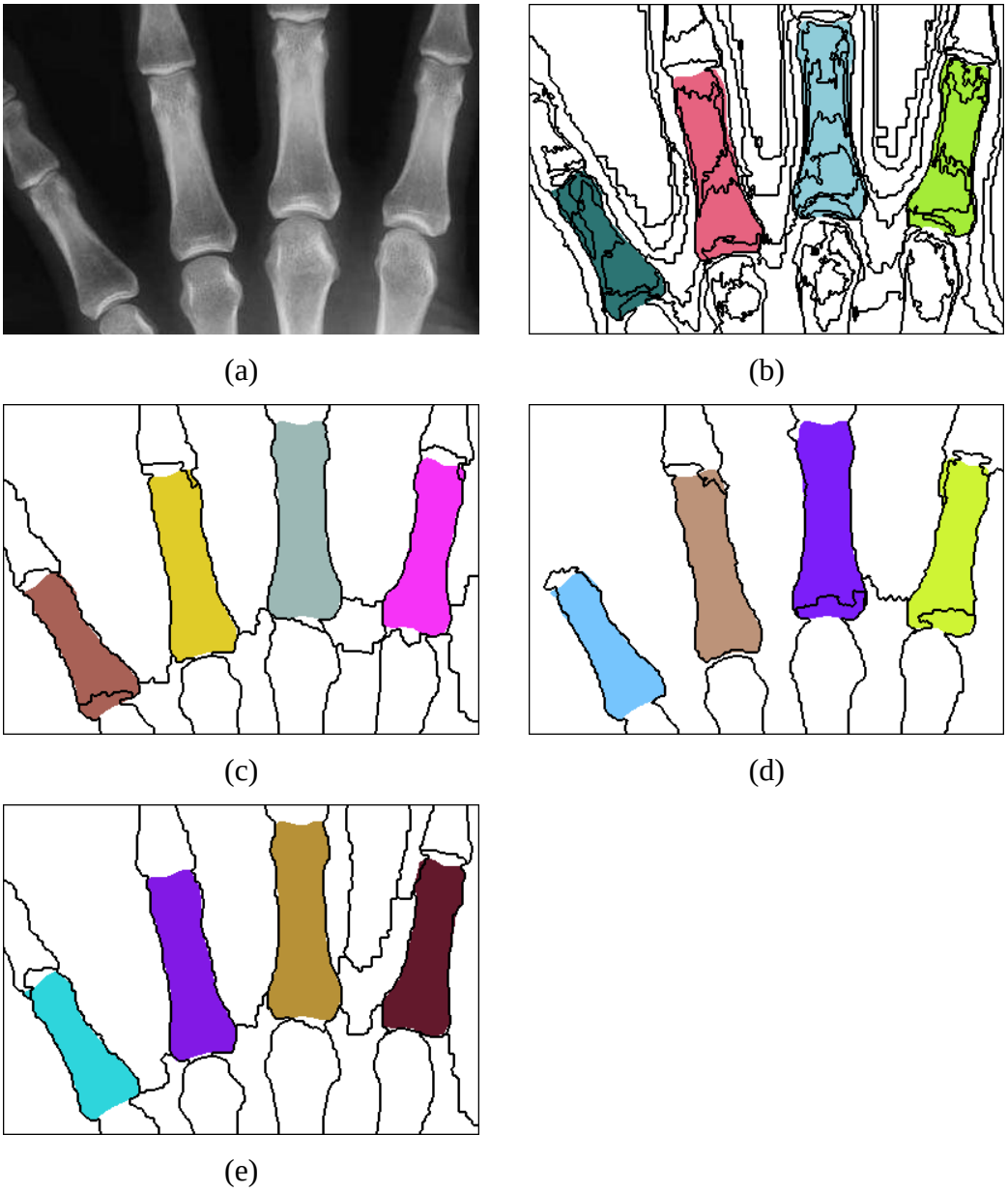


Figura A.5: (a) Imagem original e (b) segmentação baseada apenas na cor. As imagens (c), (d) e (e) apresentam as segmentações com os três atributos de forma que obtiveram melhor desempenho: Fator de Forma Circular, Suavidade e Compacidade.

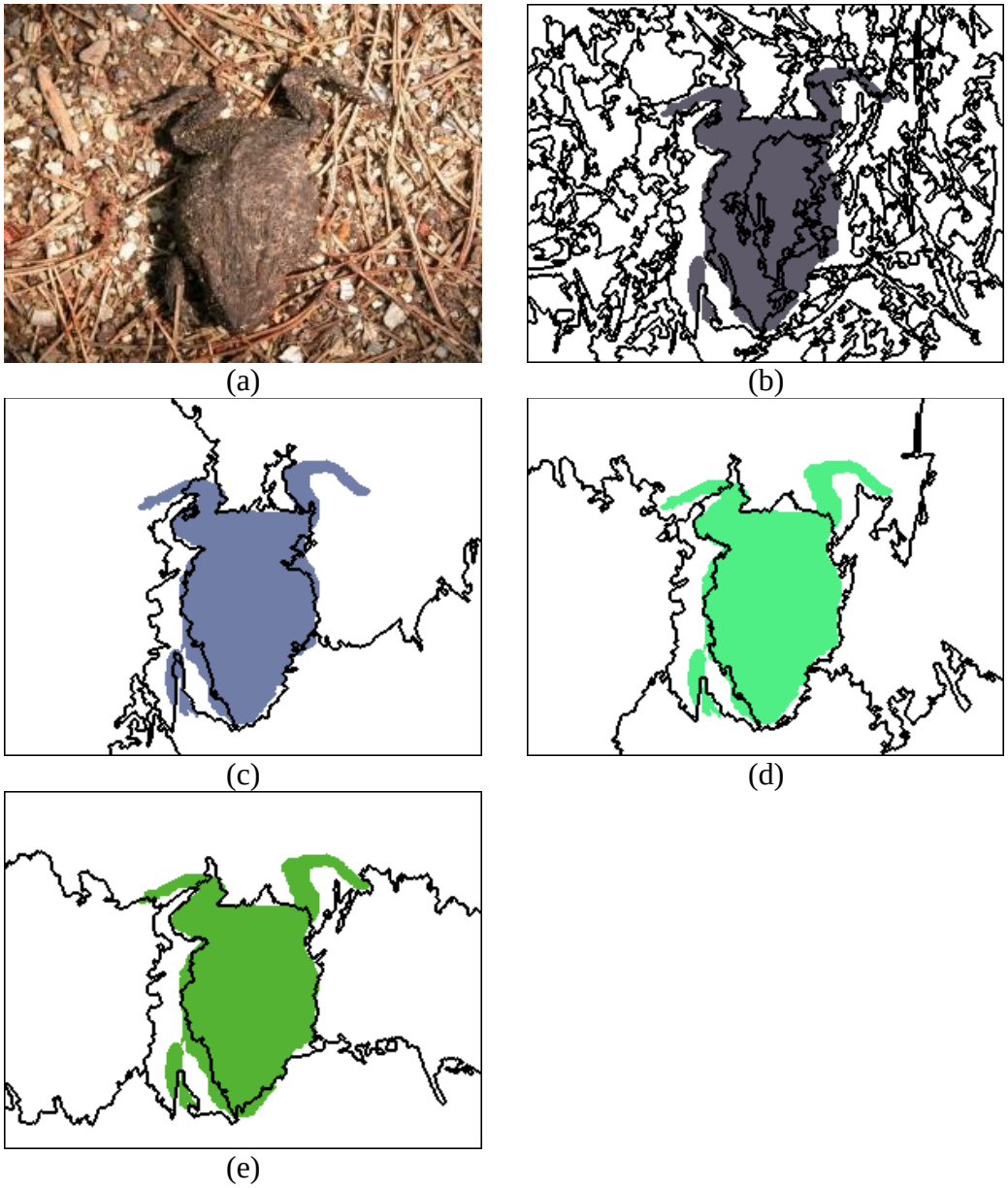
Falange Proximal



(a) (b) (c) (d) (e)

Figura A.6: (a) Imagem original e (b) segmentação baseada apenas na cor. As imagens (c), (d) e (e) apresentam as segmentações com os três atributos de forma que obtiveram melhor desempenho: Compacidade, Isometria, e Fator de Forma Circular.

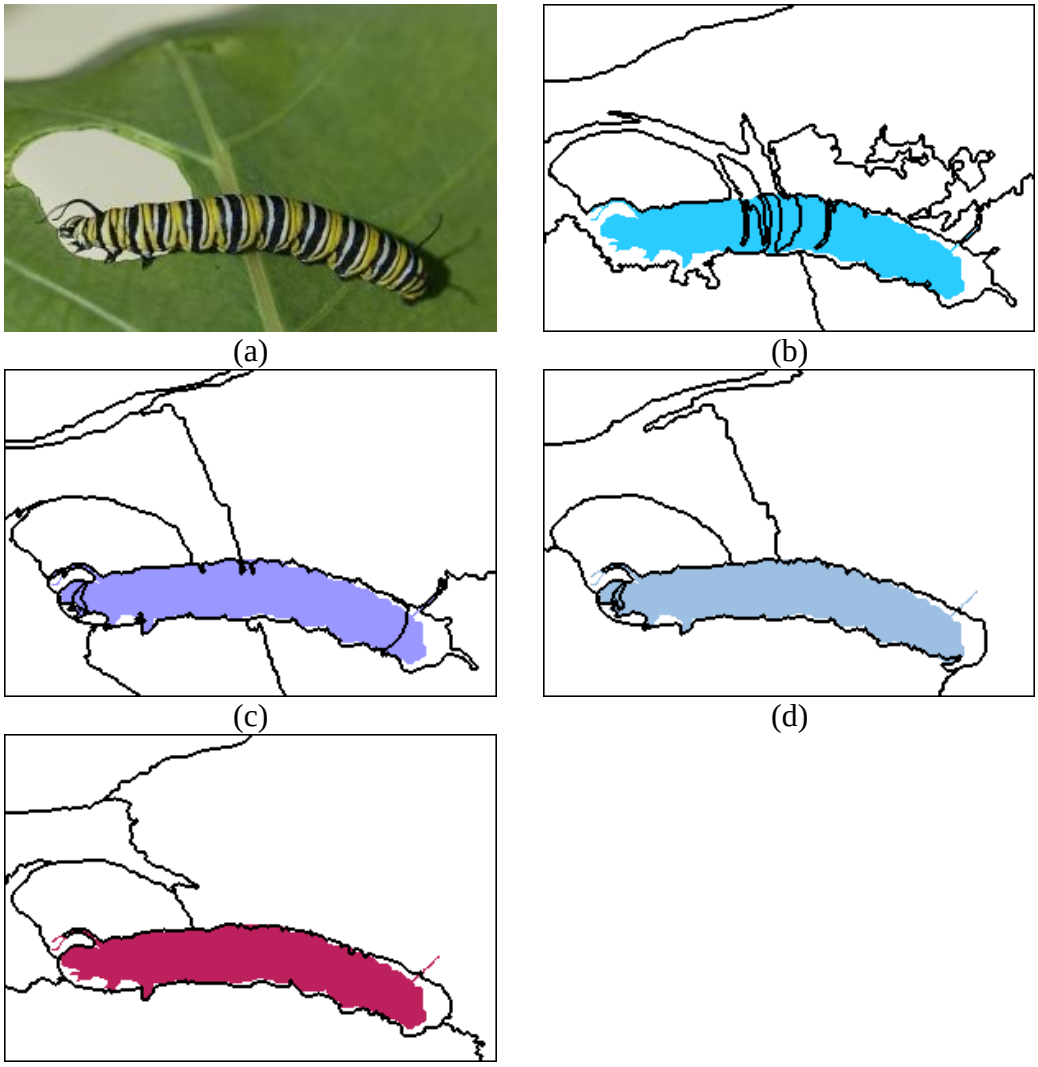
Sapo



(a) (b) (c) (d) (e)

Figura A.7: (a) Imagem original e (b) segmentação baseada apenas na cor. As imagens (c), (d) e (e) apresentam as segmentações com os três atributos de forma que obtiveram melhor desempenho: Compacidade, Retangularidade e Anisometria.

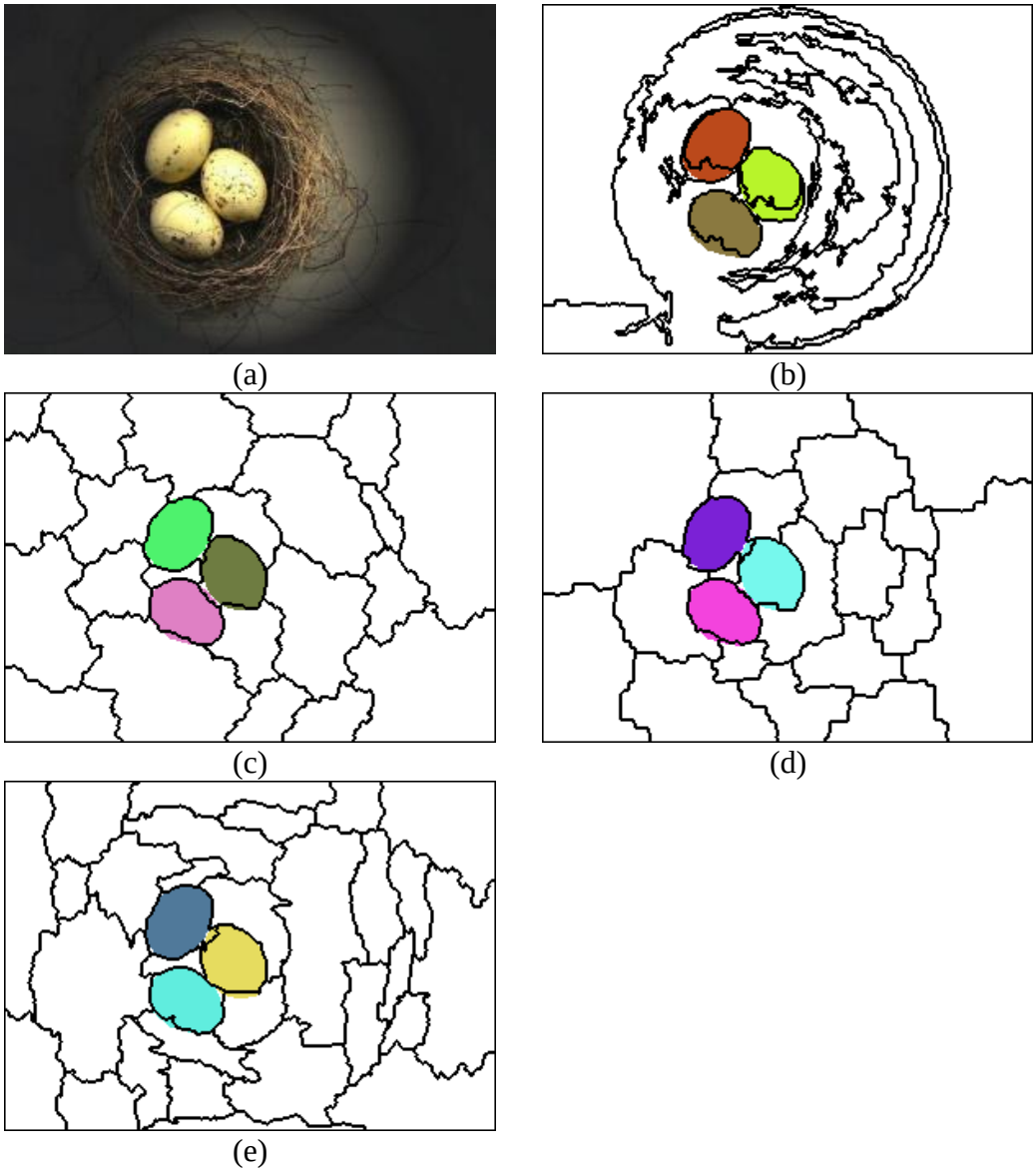
Lagarta



(a) (b) (c) (d) (e)

Figura A.8: (a) Imagem original e (b) segmentação baseada apenas na cor. As imagens (c), (d) e (e) apresentam as segmentações com os três atributos de forma que obtiveram melhor desempenho: Fator de Forma Circular, Retangularidade e Bulkiness.

Ovos



(a) (b) (c) (d) (e)

Figura A.9: (a) Imagem original e (b) segmentação baseada apenas na cor. As imagens (c), (d) e (e) apresentam as segmentações com os três atributos de forma que obtiveram melhor desempenho: Fator de Forma Circular, Compacidade e Retangularidade.

Suricato

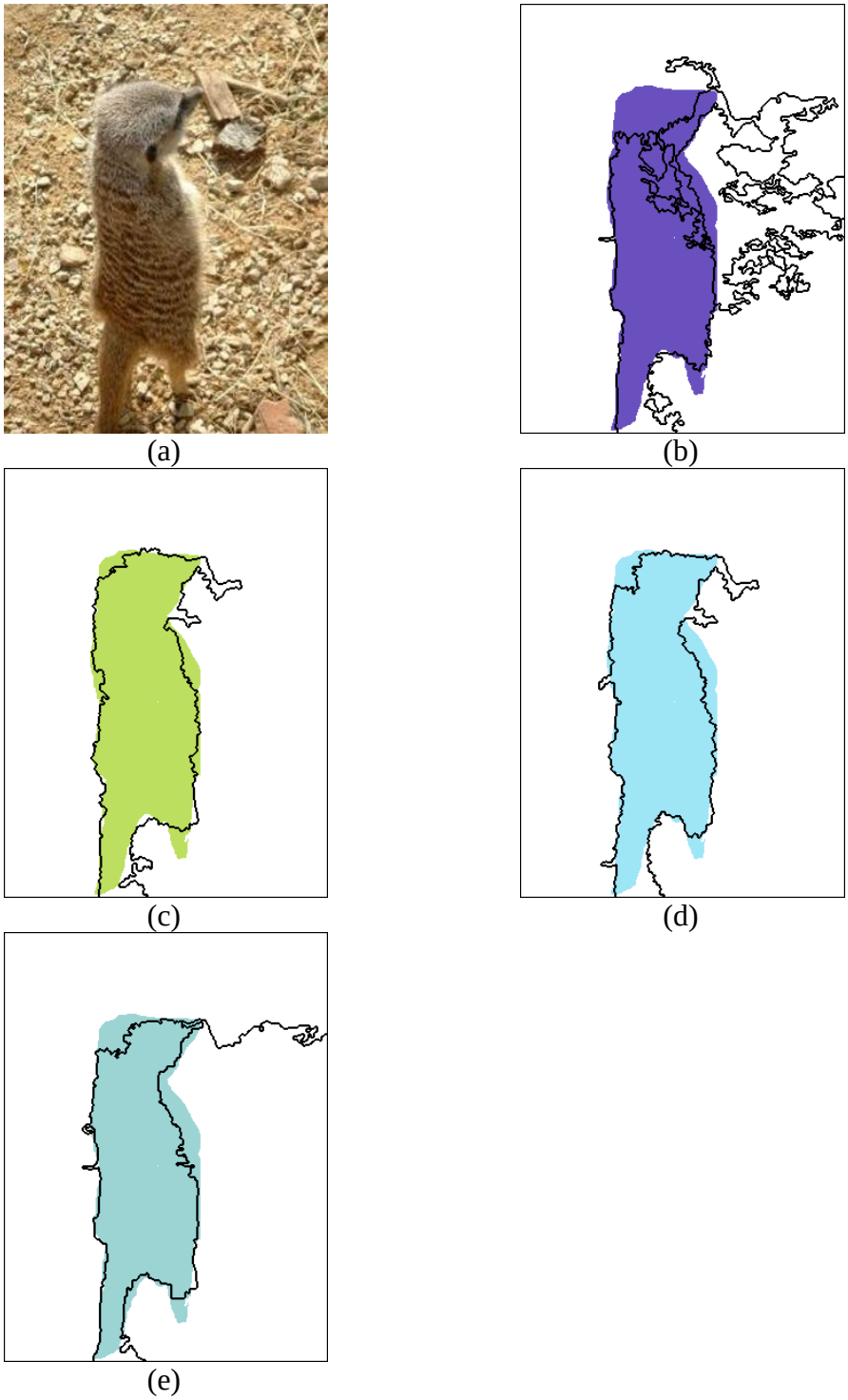


Figura A.10: (a) Imagem original e (b) segmentação baseada apenas na cor. As imagens (c), (d) e (e) apresentam as segmentações com os três atributos de forma que obtiveram melhor desempenho: Fator de Estrutura, Anisometria e Roundness.