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Center for Automated Learning and Discovery
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Research interests

- Machine learning, data mining, reasoning under uncertainty, artificial intelligence in general.

Education

- August 2002 -
PhD. student in Computational and Statistical Learning
School of Computer Science, Carnegie Mellon University
- August 2000 - May 2002
MSc. in Knowledge Discovery and Data Mining
School of Computer Science, Carnegie Mellon University
- 1998-1999
MSc. in Computer Science
Centro de Informática, Universidade Federal de Pernambuco, Brazil
- 1994-1997
BSc. in Computer Science
Departamento de Computação, Universidade Federal do Ceará, Brazil

Research experience

- 2000-present: Research assistant
Center for Automated Learning and Discovery, Carnegie Mellon University.
- 1998-1999: M.Sc student. Dissertation topic: hybrid systems of local basis functions for automatic classification in machine learning and data mining applications. Departamento de Informática, Universidade Federal de Pernambuco.

- 1998: Developed the initial model for knowledge discovery in the database of the Cadastro Nacional de Ciência & Tecnologia (Brazilian Database of Science & Technology).
- 1997: Undergraduate research: implementation and evaluation of techniques of rule extraction from artificial neural networks. Departamento de Computação, Universidade Federal do Ceará, Brazil.
- 1995-1997: Undergraduate research: development and maintenance of a rule-based expert system shell with a easy-to-use graphical interface and a library of components for OO programming. Departamento de Computação, Universidade Federal do Ceará, Brazil.

Work experience

- Research:
 - Summer 2004: summer intern at Clairvoyance Corporation, developing new algorithms and software on graphical models.
 - Summer 2001, 2002, 2003: research assistant at Carnegie Mellon University. Developed and implemented algorithms for processing and classification of spectrometer data. Implemented and evaluated algorithms for structural equation models with latent variables.
- Teaching:
 - Feb. / July 2000: lecturer on Departamento de Computação, Universidade Federal do Ceará, Brazil. Taught programming fundamentals and programming languages.
- Teaching assistant:
 - Carnegie Mellon University: Statistical Approaches for Learning and Discovery (10-702), w/ prof. John Lafferty, Teddy Seidenfeld and Larry Wasserman (Spring 2004) and Machine Learning (15-681), w/ prof. Roni Rosenfeld, (Fall 2002).
 - Universidade Federal de Pernambuco: voluntary teaching assistant in a Data Mining discipline (graduate). Taught individual lectures in data mining tools and specific machine learning techniques and accompanied the individual projects (1999); voluntary teaching assistant in an Introduction to AI discipline (undergraduate), taught individual lectures in expert systems (1998-1999);

Awards and distinctions

- Siebel Scholar 2005
- Aug 2000-May 2001: Microsoft Fellowship for MSc. research in knowledge discovery and data mining.
- Mar 1997-Jan 2000: CNPq scholarship for graduate (M.Sc.) research.
- 1997: best work of undergraduate research in Mathematics/Computer Science/Statistics. Universidade Federal do Ceará, Brazil.
- 1996: best work of undergraduate research in Mathematics/Computer Science/Statistics. Universidade Federal do Ceará, Brazil.
- Mar 1995-Dec 1997: CAPES (Programa Especial de Treinamento/Special Training Program) scholarship for undergraduate research, Brazil.
- 1991-1993: full tuition support for high school after being best student in class during all terms from 1987 to 1990. Colégio 7 de Setembro, Fortaleza - CE, Brazil.

Professional societies

- Member of Association for Computing Machinery since 1998.

Publications

Journal papers

- Moody, J.; Silva, R.; Vanderwaart, J; Ramsey, J.. and Glymour, C. (2002). "Classification and filtering of spectra: a case study in mineralogy". Intelligent Data Analysis 6, 517-530.
- Silva, R. B. A. and Ludermir, T. B. (2001). "Hybrid systems of local basis functions". Intelligent Data Analysis 5, 227-244.

Selected conference papers

- Silva, R.; Scheines, R.; Glymour, C. and Spirtes P. (2003) "Learning measurement models for unobserved variables". Proceedings of the 19th Conference on Uncertainty on Artificial Intelligence, p. 543-550.

- Moody, J.; Silva, R.; Vanderwaart, J. and Glymour, C. (2001). "Data filtering for automatic classification of rocks from reflectance spectra". Proceedings of the 7th ACM SIGKDD Conference on Knowledge Discovery and Data Mining, p. 347-352. ACM Press, San Francisco, CA.
- Silva, R. B. A. and Ludermir, T. B. (2000). "Obtaining simplified rules by hybrid learning". Proceedings of the 17th International Conference on Machine Learning, 879-886. Morgan Kaufmann, San Francisco, CA
- Silva, R. B.A and Ludermir, T. B. (1999). "Neural network methods for rule induction". Proceedings of the 1999 International Joint Conference on Neural Networks, Washington, DC.

To be submitted / selected technical reports

- Silva, R and Scheines, R. (2004). "New d-separation identification results in continuous latent variable models". To be submitted.
- Silva, R; Scheines, R.; Glymour, C and Spirtes, P. (2004). "Learning the structure of linear latent variable models". To be submitted.
- Silva, R; Zhang, J. and Shanahan, J. G. (2004). "Probabilistic workflow mining". Technical Note CC-TN-04-20, Clairvoyance Corporation. Pittsburgh, PA

References

- Richard Scheines
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- Clark Glymour
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- Peter Spirtes
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- James Shanahan
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