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VOLKAN VURAL

INTERESTS: Machine Learning, Data Mining, Optimization, Mathematical Programming

WORK EXPERIENCE

Eze Castle Software, Boston, MA **Sep '08 - Present**

Jr. Developer

- Led a research project on optimal solutions for portfolio models with compliance constraints, where the goal is to develop convex optimization based methods that can handle large-scale portfolios.
- Developed and implemented various algorithms in .NET.

Northeastern University, Boston, MA **Jan '03 – Aug '08**

Research Assistant, Electrical and Computer Engineering Department

- Developed algorithms to extend binary classifiers to multi-class and multi-label problems.
- Established Batch Classification to relax IID assumption of Support Vector Machines.
- Introduced optimization based methods to solve semi-supervised machine learning problems.
- Teaching Support Vector Machines as a part of Pattern Recognition Course at Northeastern University.
- Supervised a student on an image retrieval project.

Siemens Medical Solutions, Malvern, PA **Aug '05 - Jan '06**

Intern, Computer Aided Diagnosis Group

- Developed machine learning algorithms to detect Lung Cancer, Colon Cancer and Pulmonary Embolism.
- Patents filed: Fung, G., Krishnapuram, B., Vural, V., Rao, B. "Using Candidates Correlation Information During Computer Aided Diagnosis."

The Scientific and Technical Research Council of Turkey, Ankara, Turkey **Jun - Sep, '00**

Intern, Geographical Information Systems Group

- Developed a remotely controlled, flying device that takes images of earth surface.

Programming Skills: C#, MATLAB, Delphi

EDUCATION

Ph.D. Electrical and Computer Engineering Department **Jan '09**

Northeastern University, Boston, MA

- Thesis: Improving Large Margin Classifiers using Relationships among Samples
- Professor: Jennifer G. Dy Co advisor: Glenn Fung

M.S. Electrical and Computer Engineering Department **May '04**

Northeastern University, Boston, MA

- Concentration : Statistical Machine Learning

M.S. Electrical and Electronics Engineering Department **May '02**

Middle East Technical University (METU), Ankara, Turkey

- Concentration : Robotics

B.S. Electrical and Electronics Engineering Department **May '01**

Middle East Technical University (METU), Ankara, Turkey

- Concentration: Double Major, Telecommunications and Computer Engineering

AWARDS RECEIVED

Leadership Award, Eze Castle Software	'09
Travel-grant, Graduate and Professional Student Association, Northeastern University	'06
Travel-grant, International Conference on Machine Learning	'04
Elected to Eta Kappa Neu, Northeastern University	'04
Third Best Tutor Award, Peer Tutoring Center, Northeastern University	'03
Dean's List, Middle East Technical University, Ankara, Turkey	'98
Ranked 280th among more than 1,5 million students in Turkish National University Entrance Exam	'97

PUBLICATIONS

- Vural, V., Fung, G., Krishnapuram, B., Dy, J. and Rao, B. (2009) Using Local Dependencies within Batches to Improve Large Margin Classifiers. Journal of Machine Learning Research (JMLR), 10(Feb):183-206.
- Vural, V., Fung, G., Dy, J. and Rao, B. (2008) Semi-supervised Classifiers using A-priori Metric Information. Optimization Methods and Software Journal, Special Issue on Machine Learning and Data Mining, Vol. 23, No. 4, pp. 521-532.
- V. Vural, G. Fung, R. Rosales, J. G. Dy (2009) Multi-Class Classifiers and their Underlying Shared Structure, Proceedings of the International Joint Conferences on Artificial Intelligence (IJCAI), pp. 1267-1272
- Vural, V., Fung, G., Krishnapuram, B., Dy, J. and Rao, B. (2006) Batch Classification with Applications in Computer Aided Diagnosis. In proceedings of The European Conference on Machine learning, vol. 4212, p. 449-460, Berlin, Germany (ECML). (Acceptance rate: 25.5%, among the 14.5% accepted as full papers.)
- Vural, V. and Dy, J. (2004) A Hierarchical Method for Multi-Class Support Vector Machines. Proceedings of The Twenty-First International Conference on Machine Learning (ICML), p. 831-838. (Acceptance rate: 32%, among the 17.7% unconditionally accepted papers.)
- Vural, V. and Dy, J. (2006) Batch Classification for Supervised Learning. The Seventeenth Annual Communications and Digital Signal Processing Center Research Workshop.
- Vural, V. and Dy, J. (2004) Multi-class methods for support vector machines. The Fifteenth Annual Communications and Digital Signal Processing Center Research Workshop.

PATENTS

- Fung, G., Krishnapuram, B., Vural, V., Rao, B. "Using Candidates Correlation Information During Computer Aided Diagnosis."

PROFESSIONAL SERVICE ACTIVITIES

Reviewer for International Research Journals and Conferences

- Journal of Machine Learning Research (JMLR)
- IEEE Transactions on Knowledge and Data Engineering (TKDE)
- International Conference on Machine Learning (ICML)
- International Conference on Knowledge Discovery and Data Mining (SIGKDD)
- American Association for Artificial Intelligence (AAAI)

Volunteer Work

- Annual Conference of the Turkish American Scientists and Scholars Association
- The Twenty-First International Conference on Machine Learning

Membership: IEEE, TASSA

INTERESTS AND ACTIVITIES

Motorbikes, Sailing, Paragliding, Snowboarding, Soccer, Volleyball, Tennis
Achievements: Northeastern Intramural Soccer Team Captain, Second Place, '07. Second Place in Intramural Volleyball Tournament, '06. Third Place in METU Soccer Cup, '01. Pilot Degree in paragliding.