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SUMMARY.

Ayhan Demiriz received his Ph.D. degree from the Department of Decision Sciences and Engineering Systems at Rensselaer Polytechnic Institute, Troy, NY in 2000. His Ph.D. research was primarily on semi-supervised learning, support vector machines and boosting problems. After completing his Ph.D., he worked for Verizon Communications in Dallas, TX. His research interests at Verizon were around two main topics: Click-stream analysis and product recommendation. He has worked in academia at various capacity between 2004 and 2023. He visited UC Irvine in 2011 to conduct some research on NoCs. He founded Verikar Software in 2015. His company developed used-car pricing software. He successfully sold this product and exited from used-car pricing domain. He later oversaw development of a mobile app (KACA?) for barcode based product and price finder in the vicinity of current location. He has assisted several R&D (TEYDEB) projects at various companies as an academic consultant. He retired from academia in April, 2023. He is fifty years old and is looking for oppotunities in industry.

EDUCATION

VICE DEAN

Rensselaer Polytechnic Institute, Troy, NY	1995-2000
Ph.D. in Department of Decision Sciences & Engineering Systems	
• Thesis Title: "Learning with Capacity Control: A Semi-supervised	Approach"
Rensselaer Polytechnic Institute, Troy, NY	1995-1996
M.Sc. in Industrial and Management Engineering, Department of E	DECISION SCIENCES & ENGINEERING SYSTEMS
ISTANBUL TECHNICAL UNIVERSITY, ISTANBUL, TURKEY	1989-1993
B.Sc., Department of Industrial Engineering	
Verikar Software	2015-Present / Turkey
Founder	
 Location Based Merchandising Price Information System - www.k 	kacaapp.com
 Used Car Pricing System - www.otokaca.com 	
 Academic Consulting - Various Companies in Logistics, Hospitalit 	y Sectors and IoT (most recent)
VERIZON INC. INFORMATION TECHNOLOGY DEPARTMENT	January, 2001– September, 2004 / CA, USA
SENIOR SOFTWARE ENGINEER • Code development using C++ and SQL for the following projects: uct Recommendation, Association Mining, Click Stream Analysis, V	Customer Relationship Management (CRM), Prod- Veb Mining, Bundling Analysis.
GE CORPORATE R&D.	September, 1997 – September, 1998/ Niskayuna, NY
GRADUATE RESEARCH ASSISTANT • Worked with Data Mining Group on various GE project including: Data preparation for analysis / SAS programming, Statistical data a analysis (Knowledge Seeker), SAS macro programming for Web ap	Fime Series Analysis, Soft Computing Applications, analysis (regression, clustering etc.), Decision tree plications.
CHASE MANHATTAN MORTGAGE CORPORATION	Summer, 1997/ Metro Park, NJ
Summer Intern	
• SAS programming for data analysis, Creating database used for p	predicting prepayments.
ACADEMIC EXPERIENCE	
DEPT. OF INDUSTRIAL ENGINEERING, GEBZE TECHNICAL UNIVERS	SITY October, 2016-April, 2023 / Turkey
Dept. of Industrial Engineering, Sakarya University	November, 2004 - September, 2016 / Turkey
Associate Professor, Assistant Professor, Instructor	
Dept. of Electrical Eng. and Computer Science, UCI	April, 2011 – November, 2011 / Irvine, CA, USA
VISITING PROFESSOR	
 Research in Applying Optimization in the area of Network-on-Chi 	ps (NOC)
GRAD. SCHOOL OF NATURAL AND ENG. SCIENCES, SAKARYA UNI	VERSITY January, 2010 – January, 2013 / Turkey

DEPT. OF COMPUTER SCIENCE, UNIVERSITY COLLEGE OF LONDON

VISITING RESEARCHER

Funded by EU PASCAL Network of Excellence.

DEPT. OF MATH. SCIENCES, RENSSELAER POLYTECHNIC INSTITUTE.

POST-DOCTORAL RESEARCHER

• Funded by NSF project "The Automated Design and Discovery of Novel Pharmaceuticals using Semi-Supervised Learning in Large Molecular Databases".

DEPT. OF DSES, RENSSELAER POLYTECHNIC INSTITUTE.

September, 1998 – June, 2000 / Troy, NY

September, 2000 – December, 2000 / Troy, NY

GRADUATE RESEARCH ASSISTANT

PROJECTS

- Research Project: "A Data-Mining Driven Markdown Management System Prototype for Turkish Apparel Industry". Funded by Turkish Scientific & Technological Research Council (TUBITAK). For the duration of 36 months with a budget of approximately \$145K. November, 2007 – November, 2010. Sakarya University.
- SANTEZ R&D Project: "Location Based Fraud Prevention System for Retail Banking", 2014-2015. Sakarya University.
- KOSGEB R&D Project: "Determining Market Values of Used Cars with Artificial Intelligence Models Based on Internet Sales Ads", 2015-2016. Verikar. TEYDEB R&D Project: "Text Mining Based Used-Car Classification and Pricing System", 2017-2018. Verikar.
- Consulting Project: "Developing Software Tools (in R Shiny) for analyzing IoT Sensor Data: Pattern Search, Anomaly Detection and LSTM implementation.", Aug. 2022 - Present. Verikar.

SKILLS _____

PROGRAMMING LANGUAGES	<i>Experienced:</i> R (Shiny) SQL C++ C <i>Familiar:</i> Python COBOL C# Java
MODELLING SOFTWARE	R SAS MATLAB IBM ILOG SPSS Clementine SIMAN Arena
DATA	SQL Server SAS Oracle
LANGUAGES	<i>Native:</i> Turkish <i>Fluent:</i> English

FEATURED PUBLICATIONS ____

Machine Learning

- Bennett, K.P., Demiriz, A., Semi-supervised Support Vector Machines. In Advances in Neural Information Processing Systems (NIPS), M. S. Kearns, S. A. Solla, and D. A. Cohn Eds. 11 Cambridge, 1999, MIT Press, Pages 368-374,
- · Bennett, K.P., Demiriz, A., Shawe-Taylor, J.. A Column Generation Algorithm for Boosting. In the Proceedings of Seventeenth International Conference on Machine Learning (ICML'2000), Pat Langley Editor, Morgan Kaufmann, San Francisco, 2000, pp. 65-72.
- Demiriz, A., Bennett, K. P., Breneman, C. M., Embrechts, M. J.. Support Vector Machine Regression in Chemometrics. In Computing Science and Statistics: Proceedings of Interface, volume 33, 2001.
- Rätsch, G., Demiriz, A., Bennett, K.P.. Sparse Regression Ensembles in Infinite and Finite Hypothesis Spaces. Special Issue of Journal of Machine Learning on "New Methods for Model Selection and Model Combination", Y. Bengio and D. Schuurmans Eds. Volume 48:193-221, 2002. Kluwer Academic Publishers.
- Demiriz, A., Bennett, K.P., Shawe-Taylor, J.. Linear Programming Boosting via Column Generation. Special Issue of Journal of Machine Learning on "Support Vector Machines and Kernel Methods", N. Cristianini, C. Campbell and C. Burges Eds. Volume 46:225-254, 2002. Kluwer Academic Publishers.
- Bennett, K. P., Demiriz, A., Maclin, R.. Exploiting Unlabeled Data in Ensemble Methods. In Proceedings of the Eighth ACM SIGKDD International Conference on Knowledge Discovery and Data Mining, David Hand, Daniel Keim, and Raymond Ng, Editors, pp. 289-296, ACM Press, Edmonton, CANADA, July, 2002.
- **Data Mining**
- Demiriz, A., Bennett, K.P., Embrechts, M.J.. Semi-supervised Clustering using Genetic Algorithms. In Smart Engineering System Design: Neural networks, fuzzy logic, evolutionary programming, data mining and complex systems: Proceedings of the Artificial Neural Networks in Engineering Conference (ANNIE '99), November, 1999, editors, C. H. Dagli [et al.]. New York, ASME Press, 1999.
- Bradley, P.S., Bennett, K.P., Demiriz, A.. Constrained K-Means Clustering. Microsoft Research Technical Report 2000-65, May 2000.
- Demiriz, A., Bennett, K.P., Embrechts, M.J.. A Genetic Algorithm Approach for Semi-supervised Clustering. Journal of Smart Engineering System Design, 4:35-44, 2002. Taylor & Francis.
- Demiriz, A. webSPADE: A parallel sequence mining algorithm to analyze web log data. In Proceedings of Second IEEE International Conference on Data Mining, pages 755-758. Maebashi City, Japan (2002).
- Demiriz, A.. Enhancing Product Recommender Systems on Sparse Binary Data. Journal of Data Mining and Knowledge Discovery, Volume 9, Issue 2, September 2004, Pages 147 - 170
- Demiriz, A.. ASIPATH: A Simple Path Mining Algorithm. In Proceedings of the 16th IASTED International Conf. on Parallel and Distributed Computing and Systems), pages 638-644 November 9-11, 2004 Cambridge, MA, USA.

- Demiriz, A., Ekizoglu, B., Kula, U.. Clustering Products under Pairwise Positive and Negative Association Constraints in Retailing. In Proceedings of ANNIE 2010 in St. Louis, Mo., Nov. 1-3, 2010.
- Demiriz, A., Ertek, G., Atan, T., and Kula, U.. *Re-Mining Item Associations: Methodology and a Case Study in Apparel Retailing.* Journal of Decision Support Systems, Volume 52, Issue 1, December 2011, Pages 284-293.
- Demiriz, A., Ekizoglu, B., Using Location Aware Business Rules for Preventing Retail Banking Frauds. In the Proceedings of First International Conference on Anti-Cybercrime (ICACC-2015), November, 2015. Riyadh, Saudi Arabia.
- Demiriz, A. and Cantaş, F.. Analyzing used-car web listings via text mining Framework. In the Proceedings of First International Conference on Internet of Things and Machine Learning, IML 2017, Liverpool, United Kingdom, October 17-18, 2017.
- Demiriz, A., Ekizoglu, B., *Fuzzy rule-based analysis of spatio-temporal ATM usage data for fraud detection and prevention.* Journal of Intelligent & Fuzzy Systems, DOI: 10.3233/JIFS-169012, 2016.
- Demiriz, A.. Used Car Pricing and Beyond: A Survival Analysis Framework. In the Proceedings of First International
- Conference on Artificial Intelligence for Industries ai4i 2018, 26-28 September, 2018. Laguna Hills, CA, USA.
- Constraint Programming
- Demiriz, A., Bagherzadeh, N., Alhussein, A.. CPNoC: On Using Constraint Programming in Design of Networkon-Chip Architecture, pp.486–493, 21st Euromicro International Conference on Parallel, Distributed, and Network-Based Processing, 2013.
- Demiriz, A., Bagherzadeh, N., Ozturk, O.. Voltage island based heterogeneous NoC design through constraint programming. Computers & Electrical Engineering, DOI: 10.1016/j.compeleceng.2014.08.005, 2014.
- Demiriz, A., Bagherzadeh, N., Alhussein, A., Using Constraint Programming for the Design of Network-on-Chip Architectures. Computing, DOI: 10.1007/s00607-013-0359-4, 2015.
- Turker, T., Demiriz, A.. An Integrated Approach for Shift Scheduling and Rostering Problems with Break Times for Inbound Call Centers. Mathematical Problems in Engineering, vol. 2018, Article ID 7870849, 19 pages, 2018. DOI: 10.1155/2018/7870849.
- Demiriz, A., Ahangari H., and Ozturk O.. Temperature-Aware Core Mapping for Heterogeneous 3D NoC Design Through Constraint Programming. In the Proceedings of 28th Euromicro International Conference on Parallel, Distributed and Network-Based Processing (PDP) 2020. Sweden. DOI: 10.1109/PDP50117.2020.00054

MEMBERSHIP AFFILIATION (PAST)

- ACM
- SIAM
- INFORMS
- American Association for Artificial Intelligence (AAAI)