

E. Fatih Yetkin

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Education

Istanbul Technical University PHD COMPUTATIONAL SCIENCE & ENGINEERING • Thesis Title: Eigenvalue Based Model Order Reduction Techniques	<i>Istanbul</i> 2003 - 2012
Istanbul Technical University MSc COMPUTATIONAL SCIENCE & ENGINEERING • Thesis Title: Comparison of Model Order Reduction Techniques for VLSI Design	<i>Istanbul</i> 2000 - 2003
Uludağ University BS ELECTRONICS ENGINEERING	<i>Bursa</i> 1995 - 2000

Professional Experience

- 2018- **Asst. Prof.**, Management Information Systems Department, Kadir Has University, Istanbul, Turkey
- 2016-2018 **Asst. Prof.**, Computer Engineering Department, Altınbaş University, Istanbul, Turkey
- 2014-2016 **Postdoctoral Researcher**, INRIA Sud-Ouest, Bordeaux, France
- 2012-2014 **System & Security Administrator**, Kantar Media, Istanbul, Turkey
- 2001-2012 **Research Assistant**, Informatics Institute, Istanbul Technical University, Istanbul, Turkey

Projects

2020-2028	Yeni Teknolojiler ve Büyük Veri Analitikleri Kullanılarak, Üretim Endüstri 4.0 Uygulamalarının Üretim Süreçleri İçerisinde Geliştirilmesi , Principal Investigator	<i>TUBITAK-2244</i>
2021-2024	Büyük Verilerin Manifold Öğrenme ile Analizi için Özdeğer Dağılımı Dilimlenmesi ve Kontür Integraline Dayalı Yeni bir Yöntemin Gelistirilmesi , Principal Investigator	<i>TUBITAK-1001</i>
2021-2025	Reshaping labour force participation with Artificial Intelligence , Researcher	<i>EU MSCA-RISE</i>
2020-2028	Emlak Sektöründe Yapay Zeka Tabanlı Ürün ve Servisler , Researcher	<i>TUBITAK-2244</i>
2021-2023	Türk Dağıtım Sistemlerinde Enerji Verimliliğinin İyileştirilmesi ve Yenilenebilir Enerji Kaynaklarının Artması için Dijitalleşme , Researcher	<i>TUBITAK Newton-Katip Çelebi</i>
2018-2021	Warning (Uyarı): A Defense-in-depth Cyber Intelligence Platform to Defend against Emerging Cyber Attacks , Researcher	<i>TUBITAK-İkili İşbirliği</i>
2014-2016	Exa2CT, Exascale Algorithms and Advanced Computational Techniques , Postdoctoral Researcher	<i>EU-H2020</i>

Publications

PUBLISHED

- E. Agullo, S. Cools, **E. F. Yetkin**, N. Schenkels, L. Giraud, W. Vanroose, On soft-errors in the Conjugate Gradient: sensitivity and robust numerical detections, *SIAM Journal on Scientific Computing*, vol:42-6, pp:335-358, 2020.
- S. Cools, **E. F. Yetkin**, E. Agullo, L. Giraud, W. Vanroose, Analysis of Rounding Error Propagation in the Pipelined Conjugate Gradients Method, *SIAM Journal on Matrix Analysis and Applications*, vol:39, pp:426-450, 2018.
- E. F. Yetkin**, H. Dağ, A sparsity-preserving spectral preconditioner for power flow analysis, *Turkish Journal of Electrical Engineering & Computer Sciences* Vol:24 No:2, pp:370-383, 2016.
- H. Dağ, **E. F. Yetkin**, M. Manguoğlu, A New Preconditioner Design Based on Spectral Division for Power Flow Analysis, *International Review on Electrical Engineering*, Vol:6, No:3, pp:1339-1348, 2011.
- E. F. Yetkin**, H. Dağ, A Comparison of the Model Order Reduction Techniques for Linear Systems Arising from VLSI Interconnection Simulation, *Applied Numerical Analysis and Computational Mathematics (ANACM)*, Vol. 1, 290-303, 2003.

TECHNICAL REPORTS

- E. Agullo, S. Cools, **E. F. Yetkin**, L. Giraud, N. Schenkels, W. Vanroose, A complementary note on soft errors in the Conjugate Gradient method: the persistent error case. [Research Report] RR-9360, Inria Bordeaux Sud-Ouest. 2020.
- E. Agullo, S. Cools, **E. F. Yetkin**, L. Giraud, N. Schenkels, W. Vanroose, On soft errors in the Conjugate Gradient method: sensitivity and robust numerical detection -revised [Research Report] RR-9330, Inria Bordeaux Sud-Ouest. 2020.

CONFERENCES

- E. Agullo, L. Giraud, N. Schenkels, **E. F. Yetkin**, Towards a Holistic Detection Methodology for Transient and Persistent Soft Errors in PCG, *SIAM CSE 2021*, Fort Worth, USA, March 1-5 2021.
- Ahmed Omran, **E. F. Yetkin**, Grouping of Data Visualization Tool Features from the Perspective of Non-Technical Users, 6th International Management Information Systems Conference, October, 9-12, İstanbul, Turkey, 2019.
- E. Agullo, S. Cools, L. Giraud, **E. F. Yetkin**, W. Vanroose, On soft errors in the conjugate gradient : Sensitivity and Robust Numerical Detection, *SIAM CSE 2019*, February, Spokane, USA, 2019.
- Siegfried Cools, Jeffrey Cornelis, Emmanuel Agullo, **E. F. Yetkin**, Luc Giraud, Wim Vanroose, Numerical Analysis of the Maximal Attainable Accuracy in Communication-hiding Pipelined Conjugate Gradients, *SIAM CSE 2019*, February, Spokane, USA, 2019.
- E. Fatih Yetkin**, Oğuzhan Ceylan, Theofilos A Papadopoulos, Anastasia G Kazaki, Georgios A Barzegkar-Ntovom, Active and Reactive Power Load Profiling Using Dimensionality Reduction Techniques and Clustering, 54th International Universities Power Engineering Conference, September 3-6, Bükreş, Romania, 2019.
- Georgios A Barzegkar-Ntovom, Oguzhan Ceylan, Theofilos A Papadopoulos, **E. F. Yetkin**, Generic dynamic load modelling using cluster analysis, 53rd International Universities Power Engineering Conference, September 4-7, Glasgow, UK, 2018.
- E. F. Yetkin**, S. Piskin, Soft error sensitivity of large scale CFD applications, 10th International Workshop on Parallel Matrix Algorithms and Applications, 27-29 June, 2018.
- E. F. Yetkin**, O. Ceylan, Soft-Error Resiliency of Power Flow Calculations, International Universities' Power Engineering Conference, Crete, Greece, August 29-September 1, 2017.
- E. Agullo, L. Giraud, M. Kuhn, G. Marait, L. Poirel, **E. F. Yetkin**, Linear Solvers at Scale: Numerical Scalability and Resiliency Inside, The Platform for Advanced Scientific Computing Conference, Lugano, Switzerland, June, 26-28, 2017.
- E. Agullo, S. Cools, L. Giraud, A. Moreau, P. Salas, W. Vanroose, **E. F. Yetkin**, M. Zounon, Hard faults and soft errors: possible numerical remedies in linear algebra solvers, *VecPar 2016*, Porto, Portugal, June, 2016.

- S. Cools, W. Vanroose, **E. F. Yetkin**, E. Agullo, L. Giraud, On rounding error resilience, maximal attainable accuracy and parallel performance of the pipelined Conjugate Gradients method for large-scale linear systems in PETSc, Exascale Applications and Software Conference, April, 2016.
- E. Agullo, S. Cools, L. Giraud, W. Vanroose, **E. F. Yetkin**. Soft errors in PCG: detection and correction, SIAM conf. on Parallel Processing for Scientific Computing, Paris, France, April, 2016.
- E. Agullo, L. Giraud, P. Salas, **E. F. Yetkin**, M. Zounon. On Resiliency in Krylov Solvers, PACS'15: Platform for Advanced Scientific Computing Conference, Zurich, Switzerland, Jun, 2015.
- B. Reys, G. Pieter, K. Meerbergen, E. Agullo, **E. F. Yetkin**, L. Giraud, W. Vanroose, Communication Avoiding and Hiding in preconditioned Krylov solvers, High Performance Computing in Science and Engineering: HPCSE'15, Karolinka, Czech Republic, May, 2015.
- E. Agullo, L. Giraud, P. Salas, **E. F. Yetkin**, M. Zounon. On Numerical Resiliency in Numerical Linear Algebra Solvers, Salishan Conference on High-Speed Computing, Salishan, United States, Apr, 2015.
- E. Agullo, L. Giraud, **E. F. Yetkin**. Reliability of Checksum based Detection for Soft Errors in Conjugate Gradient Variants, SIAM Conference on Computational Science and Engineering (SIAM CSE 2015), Salt Lake city, Utah, United States, Mar, 2015.
- E. Agullo, L. Giraud, P. Salas, **E. F. Yetkin**, M. Zounon. Preliminary Investigations on Resilient Parallel Numerical Linear Algebra Solvers, SIAM Workshop on Exascale Applied Mathematics Challenges and Opportunities, Chicago, United States, July, 2014.
- E. Agullo, L. Giraud, Y. Jing, P. Salas, **E. F. Yetkin**, M. Zounon, Some Progresses on Krylov Linear Solvers: Block-variants and Resiliency, Argonne Mathematics and Computer Science Seminar, Lemont, United States, July, 2014.
- E. F. Yetkin**, H. Dağ, M. Manguoğlu, An Efficient Way to Compute the Eigenvalues of a Matrix in a Selected Region of Complex Plane, SIAM Conference on Applied Linear Algebra, Valencia, Spain, June, 18-22, 2012.
- E. F. Yetkin**, H. Dağ, Sparsity Preserved Computation for Spectral Projectors, International Conference on Applied Mathematics, Modelling, Computational Science, Waterloo, Canada, July 25-29, 2011.
- E. F. Yetkin**, H. Dağ, On the Selection of Interpolation Points for Rational Krylov Methods, Scientific Computing in Electrical Engineering SCEE 2010, Toulouse, France, 19-24 Sep. 2010.
- H. Dağ, **E. F. Yetkin**, A Spectral Divide and Conquer Method Based Preconditioner Design for Power Flow Analysis, International Conference on Power System Technology, POWERCON2010, Hangzhou, China, 24-28 Oct. 2010.
- E. F. Yetkin**, H. Dağ, Parallel Implementation of Iterative Rational Krylov Methods for Model Order Reduction, Fifth International Conference on Soft Computing, Computing with Words and Perceptions in System Analysis, Decision and Control, Famagusa, Turkish Republic of Northern Cyprus, 2-4 Sep. 2009.
- E. F. Yetkin**, H. Dağ, Applications of Eigenvalue Inclusion Theorems in Model Order Reduction, Mathematics in Industry, Proceedings of SCEE 2008, Vol:14, pp:499-507, Springer-Verlag, 2010.
- E. F. Yetkin**, S. Kaçar, H. Dağ, MOESP Algorithm for Modeling the Elongation Control for a Skin Pass Mill, International Conference on Electrical and Electronics Engineering (ELECO 07), Bursa, Turkey, 5-9 Dec. 2007.
- E. F. Yetkin**, H. Dağ, W. H. A. Schilders, MOESP Algorithm for Converting One-dimensional Maxwell Equation into a Linear System, Mathematics in Industry, Proceedings of SCEE 2006, Vol:11, pp:395-403, Springer-Verlag, 2007.