

## FIGEN ÖZTOPRAK

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### RESEARCH INTERESTS

- Nonlinear programming
- Large scale numerical optimization
- Parallel / distributed algorithms
- Applications of mathematical optimization

### EXPERIENCE

Mar 2023–	Assistant Professor, Gebze Technical University, Industrial Engineering Department
Sept 2016–Feb 2023	Consultant, Artelys Optimization, KNITRO Solver Development Team
Sept 2014–Feb 2016	Assistant Professor, İstanbul Bilgi University, Industrial Engineering Department
Sept 2012–Feb 2014	Postdoctoral Researcher, İstanbul Technical University, Informatics Institute (Computational Linear Algebra Group)
Nov 2011–May 2012	Postdoctoral Research Associate, University of Colorado at Boulder, Department of Computer Science (in collaboration with Northwestern University IEMS department)
Feb 2011–Oct 2011	Consultant, Ziena Optimization
Jan 2010–Jan 2011	Predoctoral Fellow, Northwestern University, Department of Electrical Engineering and Computer Science
Feb 2006–Jan 2010	Teaching Assistant, Sabancı University

## EDUCATION

2006 – 2011 Ph.D., Industrial Engineering, Sabancı University

1999 – 2005 B.S.- M.S., Industrial Engineering, İstanbul Technical University

## SCI-INDEXED JOURNAL PAPERS

- Ş.İ. Birbil, Ö. Martin, G. Onay, F. Öztoprak, *Bolstering Stochastic Gradient Descent with Model Building*, under revision.
- F. Öztoprak, R. Byrd, J. Nocedal, *Constrained Optimization in the Presence of Noise*, to appear, SIAM Journal on Optimization, 2023.
- H.M. Shi, M.Q. Xuan, F. Öztoprak, J. Nocedal, *On the Numerical Performance of Derivative-Free Optimization Methods Based on Finite Difference Approximations*, to appear, Optimization Methods and Software, doi: 10.1080/10556788.2022.2121832, 2022.
- K. Kaya, F. Öztoprak, Ş.İ. Birbil, A.T. Cemgil, U. Simsekli, N. Kuru, H. Koptagel, M.K. Öztürk, *A Framework for Parallel Second Order Incremental Optimization Algorithms for Solving Partially Separable Problems*, Computational Optimization and Applications, Vol.72(3), doi:10.1007/s10589-018-00057-7, 2019.
- F. Öztoprak, Ş.İ. Birbil, *An Alternative Globalization Strategy for Unconstrained Optimization*, Optimization, Vol.67(3), doi:10.1080/02331934.2017.1401070, 2017.
- M.S. Çelebi, A. Duran, F. Öztoprak, M. Tunçel, B. Akaydın, *On the Improvement of a Scalable Sparse Direct Solver for Unsymmetrical Linear Equations*, Journal of Supercomputing, Vol.73(5), doi:10.1007/s11227-016-1892-7, 2017.
- N. Keskar, J. Nocedal, F. Öztoprak, A. Wächter, *A Second-Order Method for Convex  $l_1$ -Regularized Optimization with Active Set Prediction*, Optimization Methods and Software, Vol.31(3), doi:10.1080/10556788.2016.1138222, 2016.  
(2016 Charles Broyden Best Paper Prize)
- R. Byrd, G. Chin, J. Nocedal, F. Öztoprak, *A Family of Second-Order Methods for Convex Regularized Optimization*, Mathematical Programming A, Vol.159(1-2), doi:10.1007/s10107-015-0965-3, 2016.
- R. Byrd, J. Nocedal, F. Öztoprak, *An Inexact Successive Quadratic Approximation Method for  $L_1$  Regularized Optimization*, Mathematical Programming B, Vol.157(2), doi:10.1007/s10107-015-0941-y, 2016.
- J. Nocedal, F. Öztoprak, R. A. Waltz, *An Interior Point Method for Nonlinear Programming with Infeasibility Detection Capabilities*, Optimization Methods and Software, Vol.29(4), doi:10.1080/10556788.2013.858156, 2014.
- F.B. Aydemir, A. Günay, F. Öztoprak, Ş.İ. Birbil, P. Yolum, *Multiagent Cooperation for Solving Global Optimization Problems: An Extendible Framework with Example Cooperation Strategies*, Journal of Global Optimization, Vol.57(2), doi: 10.1007/s10898-012-0012-3, 2013.
- F. Öztoprak, Ş.İ. Birbil, *A Symmetric Rank-One Quasi-Newton Method Using Negative Curvature Directions*, Optimization Methods and Software, Vol.26(3), doi: 10.1080/10556788.2010.544311, 2011.

#### OTHER JOURNAL PAPERS

- F. Öztoprak, *On the Convergence of Stochastic Aggregated Gradient Method*, Turkish Journal of Mathematics and Computer Science, 15(1), doi: 10.47000/tjmcs.1037384, 2023.
- S. Çiftlikli, F. Öztoprak, Ö. Erçetin, K. Bülbül, *Distributed Algorithms for Delay Bounded Minimum Energy Wireless Broadcasting*, International Journal of Interdisciplinary Telecommunications and Networking, Vol.1(2), doi: 10.4018/jitn.2009040104, 2009.

#### PROCEEDINGS

- A. Duran, M. S. Celebi, M. Tuncel, F. Öztoprak, *Spectral Analysis of Large Sparse Matrices for Scalable Direct Solvers*, In Advances in Applied Mathematics, pp. 153-160, Springer International Publishing, 2014.
- P. Olsen, F. Öztoprak, J. Nocedal, S. Rennie, *Newton-Like Methods for Sparse Inverse Covariance Estimation*, In Advances in Neural Information Processing Systems (NIPS 2012), pp. 755-763, 2012.
- A. Günay, F. Öztoprak, Ş.İ. Birbil, P. Yolum, *Solving Global Optimization Problems using MANGO*, Agent-Based Optimization (ABO 2009), In Agent and Multi-Agent Systems: Technologies and Applications, pp. 783-792, Springer Berlin Heidelberg, 2009.
- F. Öztoprak, Ş.İ. Birbil, *Implementation of a Fixing Strategy and Parallelization in a Recent Global Optimization Method*, Euro Mini Conference on Continuous Optimization and Knowledge-Based Technologies (EurOPT-2008), pp. 192-197, 2008.
- Ş.Ö. Şahin, F. Ülengin, F. Öztoprak, *Analysing Performance of Supply Chain Management Activities Using Artificial Neural Networks*, 10th World Conference on Transport Research, 2004.