

Mustafa MISIR

Curriculum Vitæ

Department of Computer Engineering
Faculty of Engineering, Istinye University
Topkapi Campus, Maltepe Mah.
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Turkish Citizen

EDUCATION

- Ph.D. KU Leuven, Computer Science, 2009–2012. Advisors: Patrick De Causmaecker, Greet Vanden Berghe and Katja Verbeeck
M.Sc. Yeditepe University, Computer Engineering, 2007–2008. Advisor: Ender Özcan
B.Sc. Yeditepe University, Computer Engineering, 2002–2007. Advisor: Ender Özcan

OTHER EDUCATIONAL ACTIVITIES

- Operations Management Summer Camp by Lee Kong Chian School of Business @ Singapore MU, 2014
Program Analysis and Verification Spring School by Labex Digicosme @ Supelec, 2013
A Forum in Computation, Inference and Optimization by Michael Jordan (U.C. Berkeley) @ IHES, 2013
Symposium on OR Problems and AI Techniques by KU Leuven & VUB @ KU Leuven, 2011
Dynadec/COMET Training by Pascal Van Hentenryck (Brown U.) @ Louvain-la-Neuve, 2009
Hyper-heuristics Summer School by Rong Qu & Gabriela Ochoa (U. Nottingham) @ Istanbul TU, 2007

EXPERIENCE

- Apr. 2019– ~ Associate Professor (Chair), Department of Computer Engineering & Member of the Medical Artificial Intelligence Research and Application Center (TYZAUM)¹ & Leading the Machine lEarning and Operations Research (MEmORy) Lab², Istinye University, Turkey
- Apr. 2016–Apr. 2019 Associate Professor, Leading the Machine lEarning and Operations Research (MEmORy) Lab, Institute of Machine Learning and Computational Intelligence, College of Computer Science and Technology, Nanjing University of Aeronautics and Astronautics, China
- Jan. 2015–Mar. 2016 Postdoctoral Researcher, Machine Learning for Automated Algorithm Design (ML4AAD) Research Group, Department of Computer Science, University of Freiburg, Germany
- Nov. 2013–Jan. 2015 Postdoctoral Researcher, Living Analytics Research Centre (LARC) (a joint institute with Carnegie Mellon University), School of Information Systems, Singapore Management University, Singapore
- Oct. 2012–Nov. 2013 Postdoctoral Researcher (ERCIM Marie Curie Fellow), Machine Learning and Optimisation (TAO) Team, LRI, Université Paris-Sud XI - INRIA Saclay, France
- Oct. 2013–Oct. 2013 Visiting Researcher, Dynamic and Distributed Information Systems (DDIS) Group, Department of Informatics, University of Zurich, Switzerland
- June 2013–June 2013 Visiting Researcher, Laboratory for Relational Algorithmics, Complexity and Learning (LARCA), Department of Software, Universitat Politècnica de Catalunya, Spain
- Jan. 2009–Oct. 2012 Doctoral Researcher, Combinatorial Optimisation and Decision Support (CODeS) Research Group, Department of Computer Science, KU Leuven, Belgium
- Sept. 2007–Aug. 2008 Research Assistant, Artificial Intelligence (AR+I) Laboratory, Department of Computer Engineering, Yeditepe University, Turkey
- Sept. 2007–Aug. 2008 Teaching Assistant, Department of Computer Engineering, Yeditepe University, Turkey

¹<http://tyzaum.istinye.edu.tr/en>

²<http://memorylab.github.io>

June 2007–Sept. 2007 Researcher, Artificial Intelligence (AR+I) Laboratory, Department of Computer Engineering, Yeditepe University, Turkey

Dec. 2005–June 2007 Software Developer, Logic Information Systems & Consultant Plc., Turkey

Sept. 2006–June 2007 Student Assistant, Department of Computer Engineering, Yeditepe University, Turkey

July 2006–Aug. 2006 Intern as a Software Developer, Nortel Networks Netas R&D, Turkey

June 2005–Sept. 2005 Intern as a Database Developer, Data Automation Center, Yeditepe University, Turkey

June 2005–Sept. 2005 Intern as a Research Assistant, Network Laboratory, Department of Computer Engineering, Yeditepe University, Turkey

TEACHING /~ ASSISTANCE

Spring 2019 Principles of Artificial Intelligence (COE206) [10 students], Neural Networks and Machine Learning (YAZ 304) [15 students] @ Department of Computer Engineering, Istinye University

Fall 2019 Problem Solving with Computers in C (COE201) [8 students], Computational Thinking (XXE103) [140 (Section 1: 67; Section 2: 73) students] @ Department of Computer Engineering, Istinye University

Spring 2019 Machine Learning with Python (Artificial Intelligence Workshop) [30 students] @ Department of Computer Engineering, Istinye University

Fall 2018 Modern Software Development Technology (1610311W) @ College of Computer Science and Technology, Nanjing University of Aeronautics and Astronautics

Spring 2017 Knowledge Management (1610308W) @ College of Computer Science and Technology, Nanjing University of Aeronautics and Astronautics

Fall 2017 Modern Software Development Technology (1610311W) @ College of Computer Science and Technology, Nanjing University of Aeronautics and Astronautics

Fall 2016 Modern Software Development Technology (1610311W), Software Development/+ Methods Experiment (16302180/+90), Data Mining @ College of Computer Science and Technology, Nanjing University of Aeronautics and Astronautics

Fall 2015 Machine Learning and Optimization for Algorithm Design @ Department of Computer Science, University of Freiburg

Fall 2014 Guided Research in Information Systems (IS470) @ School of Information Systems, Singapore Management University

Fall 2010 Optimisation Techniques (59235) @ Department of Computer Science, KU Leuven

Spring 2008 Data Structures (CSE211), Software Engineering (CSE344), Data Communications & Computer Networks (CSE471), Special Topics in Computer Networks (CSE402) @ Department of Computer Engineering, Yeditepe University

Fall 2007 Data Structures (CSE211), Introduction to Artificial Intelligence (CSE462), Software Engineering (CSE344) @ Department of Computer Engineering, Yeditepe University

Spring 2007 Computer Programming Practices (CSE112), Principles of Programming Languages (CSE252), Analysis of Algorithms (CSE311) @ Department of Computer Engineering, Yeditepe University

Fall 2006 Computer Programming Practices (CSE112), Principles of Programming Languages (CSE252), Digital Electronics (CSE321) @ Department of Computer Engineering, Yeditepe University

COLLABORATORS

I have published/submitted/been working on papers with the following 34 co-authors: Burak Bilgin (KU Leuven), Edmund K. Burke (U. Nottingham/Stirling), Xinye Cai (Nanjing U. Aeronautics & Astronautics), Josep Carmona (U. Polit cnica de Catalunya), Patrick De Causmaecker (KU Leuven), Shih-Fen Cheng (Singapore Management U.), Peter Demeester (KAHO-KU Leuven), Zhun Fan (Shantou U.), Aldy Gunawan (Singapore Management U.), Daniel Handoko (Singapore Management U.), Frank Hutter (U. Freiburg), Graham Kendall (U. Nottingham), Ahmed Kheiri (U. Nottingham/Cardiff), Hoong Chuin Lau (Singapore Management U.), Marius Lindauer (U. Freiburg), Jiang Lingxiao (Singapore Management U.), Samadhi Nallaperuma (U. Sheffield), Gabriela Ochoa (U. Nottingham/Stirling), Ender  zcan (U. Nottingham), Joel Ribeiro (U. Polit cnica de Catalunya), Michele Sebag (CNRS-INRIA-U. Paris Sud XI), Pieter Smet (KU Leuven), Muhammad Sulaman (Nanjing U. Aeronautics & Astronautics), Wenxue Sun (Nanjing U. Aeronautics & Astronautics), Kay Chen Tan (City U. Hong Kong), Wim Vancroonenburg (KU Leuven), Greet Vanden Berghe (KU Leuven), Pradeep Varakantham (Singapore Management U.), Katja Verbeeck (KAHO-KU Leuven), Markus Wagner (U. Adelaide), Tony Wauters (KU Leuven), Chao Xia (Nanjing U. Aeronautics & Astronautics), Li Xiang (Singapore Management U.), Tao Xu (Civil Aviation U. China)

WORKING PAPERS

1. “A Survey on Automated Algorithm Design” (joint work with Patrick De Causmaecker, Greet Vanden Berghe and Hoong Chuin Lau).
2. “A Runtime Prediction Strategy for Batch-Mode Selection Hyper-heuristics”.

JOURNAL PAPERS

3. “Design and Analysis of a Hyper-heuristic Framework” (joint work with Katja Verbeeck, Patrick De Causmaecker and Greet Vanden Berghe), *under revision*, **CHeSC 2011 Winner**.
4. “A Bi-objective Constrained Robust Gate Assignment Problem: Formulation, Instances and Algorithm” (joint work with Xinye Cai, Wenxue Sun, Qin Kai, K.C. Tan and Zhun Fan), *IEEE Transactions on Cybernetics*, 2019.
5. “A Case Study of Algorithm Selection for the Traveling Thief Problem” (joint work with Markus Wagner, Marius Lindauer, Samadhi Nallaperuma and Frank Hutter), *Journal of Heuristics (arXiv:1609.00462)*, 24, Springer, 2018.
6. “ALORS: an Algorithm Recommender System” (joint work with Michele Sebag), *Artificial Intelligence*, 244, Elsevier, 2017.
7. “An Analysis of Generalised Heuristics for Vehicle Routing and Personnel Rostering Problems” (joint work with Pieter Smet and Greet Vanden Berghe), *Journal of the Operational Research Society*, 66(5), Palgrave Macmillan, 2015.
8. “An Investigation on the Generality Level of Selection Hyper-heuristics under Different Empirical Conditions” (joint work with Katja Verbeeck, Patrick De Causmaecker and Greet Vanden Berghe), *Applied Soft Computing*, 13(7), Elsevier, 2013.
9. “A New Hyper-heuristic as a General Problem Solver: an Implementation in HyFlex” (joint work with Katja Verbeeck, Patrick De Causmaecker and Greet Vanden Berghe), *Journal of Scheduling*, 16(3), Springer, 2013.
10. “One Hyperheuristic Approach to Two Timetabling Problems in Health Care” (joint work with Burak Bilgin, Peter Demeester, Wim Vancroonenburg and Greet Vanden Berghe), *Journal of Heuristics*, 18(3), Springer, 2012.
11. “Monte Carlo Hyper-heuristics for Examination Timetabling” (joint work with Edmund Burke, Graham Kendall and Ender  zcan), *Annals of Operations Research*, 196(1), Springer, 2012.
12. “A Reinforcement Learning - Great-Deluge Hyper-heuristic for Examination Timetabling” (joint work with Ender  zcan, Gabriela Ochoa and Edmund Burke), *International Journal of Applied Metaheuristic Computing*, 1(1), IGI Global, 2010.

BOOK CHAPTERS

13. “Hyper-heuristics: Autonomous Problem Solvers”, *Automated Machine Learning and Search*, Springer, to appear.
14. “Towards Personalized Data-driven Bundle Design with QoS Constraint” (joint work with Hoong Chuin Lau), *New Ideas in Business and Consumer Analytics*, Springer, 2019.
15. “A Hyper-heuristic with Learning Automata for the Traveling Tournament Problem” (joint work with Tony Wauters, Katja Verbeeck and Greet Vanden Berghe), *Metaheuristics: Intelligent Decision Making, the 8th Metaheuristics International Conference - Post Conference Volume*, Operations Research/Computer Science Interfaces Series, Springer, 2011.

INTERNATIONAL CONFERENCE / WORKSHOP PAPERS

16. “Active Matrix Completion for Algorithm Selection”, in *the 5th International Conference on Machine Learning, Optimization, and Data Science (LOD)*, LNCS, Siena-Tuscany, Italy, Sept. 2019 / 2020.
17. “Matrix Factorization based Benchmark Set Analysis: A Case Study on HyFlex”, in *the 11th International Conference on Simulated Evolution and Learning (SEAL)*, LNCS 10593, Shenzhen, China, Nov. 2017.
18. “Simulated Annealing with an Improvement Heuristic for Ready-mix Concrete Delivery” (joint work with Muhammad Sulaman and Xinye Cai), in *the 11th International Conference on Simulated Evolution and Learning (SEAL)*, LNCS 10593, Shenzhen, China, Nov. 2017.
19. “Greedy based Pareto Local Search for Bi-objective Robust Airport Gate Assignment Problem” (joint work with Wenxue Sun, Xinye Cai, Chao Xia, Muhammad Sulaman and Zhun Fan), in *the 11th International Conference on Simulated Evolution and Learning (SEAL)*, LNCS 10593, Shenzhen, China, Nov. 2017.
20. “ADVISER⁺: Toward a Usable Web-based Algorithm Portfolio Deviser” (joint work with Hoong Chuin Lau, Li Xiang and Jiang Lingxiao), in *the 12th Metaheuristics International Conference (MIC)*, Barcelona, Spain, July 2017.
21. “Data Sampling through Collaborative Filtering for Algorithm Selection”, in *the 16th IEEE Congress on Evolutionary Computation (CEC)*, Donostia, Spain, June 2017.
22. “Matrix Factorization based Benchmark Set Analysis: A Case Study on HyFlex”, in *the Workshop on Data Science meets Optimisation (DSO)*, Donostia, Spain, June 2017.
23. “Ensemble Move Acceptance in Selection Hyper-heuristics” (joint work with Ahmed Kheiri and Ender Ozcan), in *the 31st International Symposium on Computer and Information Sciences (ISCIS)*, CCIS 659, Krakow, Poland, Oct. 2016.
24. “Designing and Comparing Multiple Portfolios of Parameter Configurations for Online Algorithm Selection” (joint work with Aldy Gunawan and Hoong Chuin Lau), in *the 10th Learning and Intelligent Optimization Conference (LION)*, LNCS 10079, Napoli, Italy, May-June 2016.
25. “Designing a Portfolio of Parameter Configurations for Online Algorithm Selection” (joint work with Aldy Gunawan and Hoong Chuin Lau), in *the 29th AAAI Conference on Artificial Intelligence: Workshop on Algorithm Configuration*, Austin/Texas, USA, Jan. 2015.
26. “OSCAR: Online Selection of Algorithm Portfolios with Case Study on Memetic Algorithms” (joint work with Daniel Handoko and Hoong Chuin Lau), in *Proceedings of the 9th Learning and Intelligent Optimization Conference (LION)*, LNCS 8994, Lille, France, Jan. 2015, **Best Paper Runner-up**.
27. “ADVISER: A Web-based Algorithm Portfolio Deviser” (joint work with Daniel Handoko and Hoong Chuin Lau), in *Proceedings of the 9th Learning and Intelligent Optimization Conference (LION)*, LNCS 8994, Lille, France, Jan. 2015.
28. “A Recommender System for Process Discovery” (joint work with Joel Ribeiro, Josep Carmona and Michele Sebag), in *Proceedings of the 12th International Conference on Business Process Management (BPM)*, LNCS 8659, Eindhoven, Netherlands, Sep. 2014.

29. “Diversity-Oriented Bi-Objective Hyper-heuristics for Patrol Scheduling” (joint work with Hoong Chuin Lau), in *Proceedings of the 10th International Conference on the Practice and Theory of Automated Timetabling (PATAT)*, York, UK, Aug. 2014.
30. “Building Algorithm Portfolios for Memetic Algorithms” (joint work with Daniel Handoko and Hoong Chuin Lau), in *Proceedings of the 16th Annual Conference on Genetic and Evolutionary Computation Companion (GECCO)*, Vancouver/British Columbia, Canada, Jul. 2014.
31. “A Dynamic Bundle Recommender System for Leisure Parks” (joint work with Shih-Fen Cheng, Hoong Chuin Lau and Pradeep Varakantham), in *the Production and Operations Management Society International Conference (POMS)*, Singapore, Jul. 2014.
32. “Group Decision Making in Selection Hyper-heuristics” (joint work with Ender Özcan and Ahmed Kheiri), in *Proceedings of the 13th Annual Workshop on Computational Intelligence*, Surrey, UK, Sep. 2013.
33. “The Effect of the Set of Low-level Heuristics on the Performance of Selection Hyper-heuristics” (joint work with Katja Verbeeck, Patrick De Causmaecker and Greet Vanden Berghe), in *Proceedings of the 12th International Conference on Parallel Problem Solving From Nature (PPSN), LNCS 7492*, Taormina, Italy, Sep. 2012.
34. “An Intelligent Hyper-heuristic Framework for CHeSC 2011” (joint work with Katja Verbeeck, Patrick De Causmaecker and Greet Vanden Berghe), in *Proceedings of the 6th Learning and Intelligent Optimization Conference (LION), LNCS 7219*, Paris, France, Jan. 2012, **CHeSC 2011 Winner**.
35. “A New Hyper-heuristic Implementation in HyFlex: a Study on Generality” (joint work with Patrick De Causmaecker, Greet Vanden Berghe and Katja Verbeeck), in *Proceedings of the 23rd Benelux Conference on Artificial Intelligence (BNAIC)*, Gent, Belgium, Nov. 2011.
36. “Security Personnel Routing and Rostering: a Hyper-heuristic Approach” (joint work with Pieter Smet, Greet Vanden Berghe and Katja Verbeeck), in *Proceedings of the 3rd International Conference on Applied Operational Research (ICAOR), LNMS 3*, Istanbul, Turkey, Aug. 2011.
37. “A New Hyper-heuristic Implementation in HyFlex: a Study on Generality” (joint work with Katja Verbeeck, Patrick De Causmaecker and Greet Vanden Berghe), in *Proceedings of the 5th Multidisciplinary International Scheduling Conference: Theory & Applications (MISTA)*, Phoenix/Arizona, USA, Aug. 2011.
38. “A Selection Hyper-heuristic for Scheduling Deliveries of Ready-Mixed Concrete” (joint work with Wim Vancroonenburg, Katja Verbeeck and Greet Vanden Berghe), in *Proceedings of the 9th Metaheuristics International Conference (MIC)*, Udine, Italy, Jul. 2011.
39. “A Hyper-heuristic Combined with a Greedy Shuffle Approach to the Nurse Rostering Competition” (joint work with Burak Bilgin, Peter Demeester, Wim Vancroonenburg, Greet Vanden Berghe and Tony Wauters), in *the 8th International Conference on the Practice and Theory of Automated Timetabling (PATAT)*, Belfast, Northern Ireland, Aug. 2010, **INRC 2010 Finalist**.
40. “A Hyper-heuristic Approach for Assigning Patients to Hospital Rooms” (joint work with Wim Vancroonenburg, Burak Bilgin, Peter Demeester and Greet Vanden Berghe), in *Proceedings of the 8th International Conference on the Practice and Theory of Automated Timetabling (PATAT)*, Belfast, Northern Ireland, Aug. 2010.
41. “Hyper-heuristics with a Dynamic Heuristic Set for the Home Care Scheduling Problem” (joint work with Katja Verbeeck, Patrick De Causmaecker and Greet Vanden Berghe), in *Proceedings of the IEEE Congress on Evolutionary Computation (CEC)*, Barcelona, Spain, Jul. 2010.
42. “A Hyper-heuristic Approach to the Home Care Scheduling Problem” (joint work with Patrick De Causmaecker, Katja Verbeeck and Greet Vanden Berghe), in *Proceedings of the 14th Belgian-French-German Conference on Optimization (BFG)*, Leuven, Belgium, Sep. 2009.

43. “A Hyper-heuristic Approach to the Patient Admission Scheduling Problem” (joint work with Burak Bilgin, Peter Demeester, Katja Verbeeck, Patrick De Causmaecker and Greet Vanden Berghe), in *Proceedings of the 35th International Conference of Operational Research Applied to Health Services (ORAHs)*, Leuven, Belgium, Jul. 2009.
44. “A New Learning Hyper-heuristic for the Traveling Tournament Problem” (joint work with Tony Wauters, Katja Verbeeck and Greet Vanden Berghe), in *Proceedings of the 8th Metaheuristics International Conference (MIC)*, Hamburg, Germany, Jul. 2009.
45. “A Self-organising Hyper-heuristic Framework” (joint work with Ender Özcan and Edmund Burke), in *Proceedings of the 4th Multidisciplinary International Scheduling Conference: Theory & Applications (MISTA)*, Dublin, Ireland, Aug. 2009.
46. “A Study of Simulated Annealing Hyperheuristics” (joint work with Edmund Burke, Graham Kendall and Ender Özcan), in *Proceedings of the 7th International Conference on the Practice and Theory of Automated Timetabling (PATAT)*, Montreal, Canada, Aug. 2008.
47. “Learning Heuristic Selection in Hyper-heuristics for Examination Timetabling” (joint work with Edmund Burke, Gabriela Ochoa and Ender Özcan), in *Proceedings of the 7th International Conference on the Practice and Theory of Automated Timetabling (PATAT)*, Montreal, Canada, Aug. 2008.

NATIONAL CONFERENCE / WORKSHOP PAPERS

48. “Design Principles and Performance Analysis of a Selection Hyper-heuristic across Multiple Problem Domains” (joint work with Katja Verbeeck, Patrick De Causmaecker and Greet Vanden Berghe), in *Proceedings of the 26th Belgian Conference on Operations Research (ORBEL)*, Brussels, Belgium, Feb. 2012.
49. “An Adaptive Selection Hyper-heuristic for CHESC 2011” (joint work with Patrick De Causmaecker, Greet Vanden Berghe and Katja Verbeeck), in *Proceedings of the OR53 Annual Conference*, Nottingham, UK, Sep. 2011.
50. “Design of a Generic Selection Hyper-heuristic” (joint work with Katja Verbeeck, Greet Vanden Berghe and Patrick De Causmaecker), in *Proceedings of the 25th Belgian Conference on Operations Research (ORBEL)*, Gent, Belgium, Feb. 2011.
51. “An Introduction to New Application Domains for the Home Care Scheduling Problem” (joint work with Pieter Smet and Greet Vanden Berghe), in *Proceedings of the 25th Belgian Conference on Operations Research (ORBEL)*, Gent, Belgium, Feb. 2011.
52. “A Hyper-heuristic Approach for the Ready-Mixed Concrete Delivery Problem” (joint work with Wim Vancroonenburg and Greet Vanden Berghe), in *Proceedings of the 25th Belgian Conference on Operations Research (ORBEL)*, Gent, Belgium, Feb. 2011.
53. “Hyper-heuristics Learning a Varying Set of Low-level Heuristics” (joint work with Katja Verbeeck, Greet Vanden Berghe and Patrick De Causmaecker), in *Proceedings of the 24th Belgian Conference on Operations Research (ORBEL)*, Liege, Belgium, Jan. 2010.
54. “Hyper-heuristics: Raising the Level of Generality” (joint work with Patrick De Causmaecker, Katja Verbeeck and Greet Vanden Berghe), in *Proceedings of the 23rd Belgian Conference on Operations Research (ORBEL)*, Leuven, Belgium, Feb. 2009.

TECHNICAL REPORTS

55. “Algorithm Selection as a Collaborative Filtering Problem” (joint work with Michele Sebag), INRIA, Tech. Report, 2013.
56. “A New Hyper-heuristic Approach to the Ready-Mixed Concrete Delivery Problem” (joint work with Wim Vancroonenburg, Katja Verbeeck and Greet Vanden Berghe), KAHO Sint-Lieven, Tech. Report, 2011.
57. “A Hyper-heuristic Approach to the Home Care Scheduling Problem” (joint work with Katja Verbeeck, Greet Vanden Berghe and Patrick De Causmaecker), KAHO Sint-Lieven, Tech. Report, 2009.

OTHER PUBLICATIONS

58. “Intelligent Hyperheuristics: A Tool for Solving Generic Optimisation Problems”, Ph.D. Dissertation, Department of Computer Science, KU Leuven, 2012, **ERCIM Cor Baayen Award 2013 Finalist**.
59. “Group Decision Making for Move Acceptance in Hyperheuristics”, M.Sc. Thesis, Department of Computer Engineering, Yeditepe University, 2008.
60. “A New Hyperheuristic, IDWalk based Hyperheuristic Strategy”, B.Sc. Graduation Project Report, Department of Computer Engineering, Yeditepe University, 2007.

BOOK / PROCEEDINGS EDITOR

- 2019 Proceedings of the 8th International Conference on Computer Engineering and Networks (CENet 2018), Shanghai, China – *Advances in Intelligent Systems and Computing*, Springer
- 2019 Proceedings of the 6th International Conference on Information Science and Cloud Computing (ISCC 2018), Guangzhou, China – *Advances in Intelligent Systems and Computing*, Springer

CITATION REPORT

Google scholar: # citations = 806, h-Index = 17

RESEARCH FUND

- 06/2020 - 12/2021 Researcher, *Sustainable Aggregate Production Planning using Multi-Criteria Decision-Making, Mathematical Modeling and Dynamic Programming* — Joint Grant by Scientific and Technological Research Council of Turkey & Iran Ministry of Science, Technology and Innovation (MSRT) (TUBITAK 2535) (165K TL/TRY = ~25K USD)
- 05/2019 - 05/2021 Principal Investigator, *Automated Algorithm Design for Ab Initio Protein Structure Prediction* — Reintegration Grant by Scientific and Technological Research Council of Turkey (TUBITAK 2232) (170K TRY = ~30K USD)
- 04/2016 - 12/2017 Principal Investigator, *Algorithm Selection for Multiobjective Optimization* — Nanjing University of Aeronautics and Astronautics Research Fund (80K RMB = ~13K USD)

INDUSTRIAL RESEARCH PROJECTS

- 2013 - 2015 Researcher, *Dynamic Learning and Optimization of User Experience in Travel and Tourism*. Funded by National Research Foundation (NRF) of Singapore @ Singapore Management U.
- 2009 - 2011 Researcher, *IWT 090549 - Workforce Routing and Rostering* (A commercial optimization system called MOUNT-Q was developed – <http://www.mountq.be>). Funded by Agency for Innovation by Science and Technology (IWT) of Belgium @ KU Leuven

PROJECT / STUDENT SUPERVISION

- Jan. 2020– ~ Oguzhan Tas, Machine Learning for Intrusion Detection, *PhD Thesis* in Computer Engineering, Sabahattin Zaim University, Department of Computer Engineering
- Sept. 2018– ~ Yudistira Ashadi, Multi-objective Compiler Optimization, *Master Thesis* in Computer Science, Nanjing U. Aeronautics and Astronautics, College of Computer Science and Technology (Joint Supervision: Xinye Cai)
- Sept. 2017–Dec. 2019 Cheng Jingsong, Algorithm Selection through Deep Learning, *Master Thesis* in Computer Science, Nanjing U. Aeronautics and Astronautics, College of Computer Science and Technology
- Jan. 2018–June 2018 Yudistira Ashadi, Selection Hyper-heuristics for the Next Release Problem, *Bachelor Thesis* in Software Engineering & Management, Nanjing U. Aeronautics and Astronautics, College of Computer Science and Technology

- Sept. 2016–Dec. 2017 Muhammad Sulaman, Simulated Annealing with a Time-slot Heuristic for Ready-mix Concrete Delivery, *Master Thesis* @ Nanjing U. Aeronautics and Astronautics, College of Computer Science and Technology (Joint Supervision: Xinye Cai)
- Aug. 2015–Dec. 2015 Xiang Li, Algorithm Portfolio Generation via Configuration, *Undergraduate Research Project*, Singapore Management U., School of Information Systems
- Mar. 2015–Aug. 2015 Enrique Urrea, Parameter Configuration for Hyper-heuristics, *Internship Project*, U. Freiburg, Department of Computer Science
- May 2014–July 2014 Hoang Thanh Tung, Online Crossover Selection in Memetic Algorithms, *Internship Project*, Singapore Management U., School of Information Systems

CONFERENCE / WORKSHOP COMMITTEES / CHAIRS

1. Program committee, 12th International Conference on Evolutionary Computation Theory and Applications (ECTA), Budapest, Hungary, November 2020
2. Program committee, 16th Parallel Problem Solving from Nature (PPSN), Leiden, Netherlands, September 2020
3. Program committee, 21st Annual Conference on Genetic and Evolutionary Computation (GECCO), General Evolutionary Computation and Hybrids, Cancun, Mexico, July 2020
4. Program committee, 6th International Conference on Machine Learning, Optimization, and Data Science (LOD), Siena-Tuscany, Italy, July 2020
5. Program committee, 2nd International Conference on Advances in Signal Processing and Artificial Intelligence (ASPAI), Berlin, Germany, Apr. 2020
6. Program committee, 34th AAAI Conference on Artificial Intelligence (AAAI), New York, USA, Feb. 2020
7. Program committee, IEEE Symposium on Evolutionary Scheduling and Combinatorial Optimisation (ESCO) under the IEEE Symposium Series on Computational Intelligence (SSCI), Xiamen, China, Dec. 2019
8. Program committee, 11th International Conference on Evolutionary Computation Theory and Applications (ECTA) / 11th International Joint Conference on Computational Intelligence (IJCCI), Vienna, Austria, Sept. 2019
9. Program committee, 20th Annual Conference on Genetic and Evolutionary Computation (GECCO), General Evolutionary Computation and Hybrids, Prague, Czech Republic, July 2019
10. Program committee, 1st International Conference on Advances in Signal Processing and Artificial Intelligence (ASPAI), Barcelona, Spain, Mar. 2019
11. Program committee, 33rd AAAI Conference on Artificial Intelligence (AAAI), Honolulu/Hawaii, USA, Jan.-Feb. 2019
12. Program chair, 6th International Conference on Information Science and Cloud Computing (ISCC), Guangzhou, China, Dec. 2018
13. Program committee, 10th International Joint Conference on Computational Intelligence (IJCCI), Seville, Spain, Sept. 2018
14. Program committee, 12th International Conference on the Practice and Theory of Automated Timetabling (PATAT), Vienna, Austria, Aug. 2018
15. Program chair, 8th International Conference on Computer Engineering and Networks (CENet), Shanghai, China, Aug. 2018
16. Program committee, 19th Annual Conference on Genetic and Evolutionary Computation (GECCO), Kyoto, Japan, July 2018

17. Program committee, 9th International Joint Conference on Computational Intelligence (IJCCI), Funchal, Madeira - Portugal, Nov. 2017
18. Program committee, 19th Annual Conference on Genetic and Evolutionary Computation (GECCO), Evolutionary Combinatorial Optimization and Metaheuristics, Berlin, Germany, July 2017
19. Program chair, 7th International Conference on Computer Engineering and Networks (CENet), Shanghai, China, July 2017
20. Program committee, 3rd IEEE International Conference on Cybernetics (CYBCONF) - Special session on Deep Learning for Prediction and Estimation (DLPE), Exeter, UK, June 2017
21. Program committee, 25th International Joint Conference on Artificial Intelligence (IJCAI), New York, USA, Jul. 2016
22. Program committee, 18th Annual Conference on Genetic and Evolutionary Computation (GECCO), Search-Based Software Engineering and Self-* Search, Denver/Colorado, USA, July 2016
23. Program committee, 17th Annual Conference on Genetic and Evolutionary Computation (GECCO), Search-Based Software Engineering and Self-* Search, Madrid, Spain, July 2015
24. Program committee, 16th Annual Conference on Genetic and Evolutionary Computation (GECCO), Self-* Search, Vancouver/British Columbia, Canada, July 2014
25. Program committee, 15th Annual Conference on Genetic and Evolutionary Computation (GECCO), Self-* Search, Amsterdam, Netherlands, July 2013
26. Program committee, 14th Annual Conference on Genetic and Evolutionary Computation (GECCO), Self-* Search, Philadelphia/Pennsylvania, USA, July 2012

CONFERENCE / WORKSHOP / SPECIAL SESSION ORGANIZER

1. Stream on *Hyper-heuristics*, in the 30th European Conference on Operational Research (EURO), Dublin, Ireland, June 2019
2. Invited Session on *Automated Algorithm Design for Multi-objective Optimization Problems*, in the 25th International Conference on Multiple Criteria Decision Making (MCDM), Istanbul, Turkey, June 2019
3. Stream on *Hyper-heuristics*, in the 29th European Conference on Operational Research (EURO), Valencia, Spain, July 2018
4. Special Session on *Automated Algorithm Design as Ensemble Techniques*, in the IEEE Symposium on Computational Intelligence and Ensemble Learning (CIEL) under the IEEE Symposium Series on Computational Intelligence (SSCI), Honolulu/Hawaii, USA, Nov. 2017

REVIEWER

Journals: IEEE Transactions on Evolutionary Computation, Evolutionary Computation (MIT), IEEE Computational Intelligence Magazine, INFORMS Journal on Computing, Applied Soft Computing (Elsevier), Artificial Intelligence Review (Springer), European Journal of Operational Research (Elsevier), Expert Systems with Applications (Elsevier), Information Sciences (Elsevier), Journal of Heuristics (Springer), Memetic Computing (Springer), Evolving Systems (Springer), Journal of Scheduling (Springer), Annals of Operations Research (Springer), Swarm and Evolutionary Computation (Elsevier), Journal of the Operational Research Society (Palgrave Macmillan), International Transactions in Operational Research (Wiley), Communications in Nonlinear Science and Numerical Simulation (Elsevier), Automation in Construction (Elsevier), International Journal of Metaheuristics (InderScience), International Journal of Innovative Computing and Applications (InderScience), International Journal of Bio-Inspired Computation (InderScience), Turkish Journal of Electrical Engineering & Computer Sciences (TUBITAK), Journal of Information Technology Research (IGI Global), Computer Communication & Collaboration (BAP), Journal of Applied Operational Research (Tadbir)

Conferences: 34rd AAAI Conference on Artificial Intelligence (AAAI 2020), 30th International Conference on Automated Planning and Scheduling (ICAPS 2020), 21st Annual Conference on Genetic and Evolutionary Computation (GECCO 2020), 6th International Conference on Machine Learning, Optimization, and Data Science (LOD 2020), 16th Parallel Problem Solving from Nature (PPSN 2020), 12th International Conference on Evolutionary Computation Theory and Applications (ECTA 2020), 33rd AAAI Conference on Artificial Intelligence (AAAI 2019), 20th Annual Conference on Genetic and Evolutionary Computation (GECCO 2019), IEEE Symposium on Evolutionary Scheduling and Combinatorial Optimisation (ESCO 2019) under the IEEE Symposium Series on Computational Intelligence (SSCI 2019), 18th IEEE Congress on Evolutionary Computation (CEC 2019), 11th International Conference on Evolutionary Computation Theory and Applications (ECTA 2019) / 11th International Joint Conference on Computational Intelligence (IJCCI 2019), 1st International Conference on Advances in Signal Processing and Artificial Intelligence (ASPAI 2019), 9th IEEE Symposium Series on Computational Intelligence (SSCI 2018), 10th International Joint Conference on Computational Intelligence (IJCCI 2018), 19th Annual Conference on Genetic and Evolutionary Computation (GECCO 2018), 17th IEEE Congress on Evolutionary Computation (CEC 2018), 12th International Conference on the Practice and Theory of Automated Timetabling (PATAT 2018), 2nd International Conference on Computer Science and Application Engineering (CSAE 2018), 4th International Conference on Fuzzy Systems and Data Mining (FSDM 2018), 8th IEEE Symposium Series on Computational Intelligence (SSCI 2017), 19th Annual Conference on Genetic and Evolutionary Computation (GECCO 2017), 16th IEEE Congress on Evolutionary Computation (CEC 2017), 9th International Joint Conference on Computational Intelligence (IJCCI 2017), 3rd IEEE International Conference on Cybernetics (CYBCONF) - Special session on Deep Learning for Prediction and Estimation (DLPE 2017), 25th International Joint Conference on Artificial Intelligence (IJCAI 2016), 18th Annual Conference on Genetic and Evolutionary Computation (GECCO 2016), 10th Learning and Intelligent Optimization Conference (LION 2016), 15th IEEE Congress on Evolutionary Computation (CEC 2016), 17th Annual Conference on Genetic and Evolutionary Computation (GECCO 2015), 28th Canadian Artificial Intelligence Conference (AI 2015), 16th Annual Conference on Genetic and Evolutionary Computation (GECCO 2014), 8th Learning and Intelligent Optimization Conference (LION 2014), 6th Multidisciplinary International Scheduling Conference: Theory & Applications (MISTA 2013), 15th Annual Conference on Genetic and Evolutionary Computation (GECCO 2013), 14th Annual Conference on Genetic and Evolutionary Computation (GECCO 2012)

Grant Evaluation: TUBITAK Technology and Innovation Support Programs (TEYDEB)

INVITED/~ TALKS³

- May 2020 “Artificial Intelligence against COVID-19”, Webinar – Qatar University, Qatar
- Oct. 2019 “Artificial Intelligence in Medicine”, Istinye University, Turkey
- Mar. 2018 “Algorithm Selection: Offline + Online Techniques”, CODES, Department of Computer Science, KU Leuven, Belgium
- Dec. 2017 “Automated Algorithm Design in Cloud”, Keynote Talk, the 5th International Conference on Information Science and Cloud Computing (ISCC 2017), China
- Nov. 2017 “Algorithm Selection: Offline + Online Techniques”, Tutorial, the 11th International Conference on Simulated Evolution and Learning (SEAL 2017), China
- July 2017 “Algorithm Selection: Offline + Online Techniques”, Keynote Talk, the 7th International Conference on Computer Engineering and Networks (CENet 2017), China
- May 2017 “Automated Algorithm Design: Towards the Ultimate Algorithm Designer”, ASAP, School of Computer Science, University of Nottingham, UK
- Nov. 2016 “Automated Algorithm Design: Towards the Ultimate Algorithm Designer”, Keynote Talk, the 6th International Conference on Computer Engineering and Networks (CENet 2016), China
- June 2016 “Automated Algorithm Design: Towards the Ultimate Algorithm Designer”, CODES, Department of Computer Science, KU Leuven, Belgium
- Sept. 2015 “Automated Algorithm Design: Offline and Online Techniques”, College of Computer Science and Technology, Nanjing University of Aeronautics and Astronautics, China

³excluding conference/workshop paper talks

- Aug. 2015 “Intelligent Hyper-heuristics: A Tool for Solving Generic Optimisation Problems”, United Technologies Research Center, Ireland
- May 2015 “Automated Algorithm Design: Offline and Online Techniques”, Department of Computer Engineering, Abdullah Gül University, Turkey
- Apr. 2015 “Automated Algorithm Design: Offline and Online Techniques”, Department of Electrical and Electronics Engineering, Istanbul Medipol University, Turkey
- Nov. 2014 “Intelligent Hyper-heuristics: A Tool for Solving Generic Optimisation Problems”, Department of Computer Science, KU Leuven, Belgium
- Oct. 2014 “Algorithm Selection as a Collaborative Filtering Problem”, ML4AAD, Department of Computer Science, University of Freiburg, Germany
- Jan. 2014 “Automated Algorithm Design: Offline and Online Techniques”, College of Engineering, Antalya International University, Turkey
- Jan. 2014 “Automated Algorithm Design: Offline and Online Techniques”, Department of Computer Engineering, Meliksah University, Turkey
- Jan. 2014 “Algorithm Selection as a Collaborative Filtering Problem”, LARC, School of Information Systems, Singapore Management University, Singapore
- Oct. 2013 “Algorithm Selection as a Collaborative Filtering Problem”, DDIS, Department of Informatics, University of Zurich, Switzerland
- Aug. 2013 “High-level Search: From Hyper-heuristics to Algorithm Selection”, LARC, School of Information Systems, Singapore Management University, Singapore
- June 2013 “Algorithm Selection as a Collaborative Filtering Problem”, LARCA, Department of Software, Universitat Politècnica de Catalunya, Spain
- June 2013 “Algorithm Selection as a Collaborative Filtering Problem”, INRIA, LRI, Université Paris-Sud XI, France
- May 2013 “Algorithm Selection as a Collaborative Filtering Problem”, CODES, Department of Computer Science, KU Leuven, Belgium
- Nov. 2012 “High-level Search: From Hyper-heuristics to Algorithm Selection”, INRIA, LRI, Université Paris-Sud XI, France
- June 2012 “Intelligent Hyper-heuristics: A Tool for Solving Generic Optimisation Problems”, Department of Computer Science, University College London, UK
- May 2012 “Intelligent Hyper-heuristics: A Tool for Solving Generic Optimisation Problems”, Department of Computing Science and Mathematics, University of Stirling, UK
- Mar. 2012 “Intelligent Hyper-heuristics: A Tool for Solving Generic Optimisation Problems”, CODES, Department of Computer Science, KU Leuven, Belgium
- Jan. 2012 “An Adaptive Selection Hyper-heuristic for CHeSC 2011”, ASAP, School of Computer Science, University of Nottingham, UK
- Oct. 2011 “An Adaptive Selection Hyper-heuristic for CHeSC 2011”, CODES, Department of Computer Science, KU Leuven, Belgium
- Jan. 2011 “Intelligent Hyper-heuristics for Generality”, KAHO Dag, KAHO Sint-Lieven, Belgium
- Dec. 2009 “Free Lunches for Hyper-heuristics”, Department of Computer Science, KU Leuven, Belgium
- Sept. 2009 “Fitness Landscape Analysis in Hyper-heuristics”, Department of Computer Science, KU Leuven, Belgium
- Jan. 2009 “Hyper-heuristics”, Interdisciplinary Research on Technology, Education & Communication (iTec) Seminar Series – KU Leuven, Belgium
- Mar. 2008 “Group Decision Making in Hyper-heuristics”, Department of Computer Engineering, Yeditepe University, Istanbul, Turkey

INTERESTS

Major Research Interests: *Automated Algorithm Design, Data Science/Analytics and Operations Research* with the help of *Artificial Intelligence, Machine Learning, Reinforcement Learning, Evolutionary Algorithms, Computational Intelligence, Hyper-heuristics, Meta-heuristics, Algorithm Portfolios, Adaptive/Reactive/Autonomous Search, Meta-learning, Empirical Algorithmics, Design of Experiments, Recommender Systems (Collaborative Filtering), Boolean Satisfiability, Constraint Programming, Combinatorial Optimisation, Data Mining (Knowledge Discovery), Expert Systems, Decision Support Systems and Automated Planning/Scheduling*

Future Research Interests: *Bioinformatics, (Search based) Software Engineering, Autonomous / Evolutionary Robotics, Cyber Security, GPU Computing, Evolvable Hardware, Computational Sustainability, Supply Chain Management, Cognitive Science and Theoretical Computer Science*

Others: *Psychology, History, Architecture, Ornithology, Computer Games (mostly FPS, Racing) and Photography²*

AWARDS & HONOURS

Academic Visit Support, COST STSM Grant by Cost Action CA15140 – University College Dublin, 2019
Conference Grant, COST ITC Conference Grant by Cost Action CA15140, 2019
Conference Grant, TUBITAK 2224-A Support to Participate in International Scientific Activities, 2019
Research Fellowship, TUBITAK 2232 Reintegration Grant, 2018
Nominee, Thousand Young Talents Program of China, 2016
Best Paper Runner-up, 9th Learning and Intelligent Optimization Conference, 2015
Finalist, ERCIM Cor Baayen Award (for Young Researchers in CS and Applied Math), 2013
Postdoctoral Fellowship, ERCIM Alain Bensoussan Fellowship Programme, 2012–2013
Winner, Cross Domain Heuristic Search Challenge (CHeSC)³, 2011
Finalist Team Member, International Nurse Rostering Competition (INRC)⁴, 2010
Ph.D Research Fellowship, Department of Computer Science, KU Leuven, 2009–2012
Turkish National Ministry of Education Scholarship for PhD in Japan & USA, 2008 (declined)
M.Sc. Graduate Assistantship, Department of Computer Engineering, Yeditepe University, 2007–2008
B.Sc. Student Assistantship, Department of Computer Engineering, Yeditepe University, 2006–2007
B.Sc. Fellowship, Department of Computer Engineering, Yeditepe University, 2002–2007
High Honour, M.Sc. Degree in Computer Engineering, Yeditepe University, 2008
Honour, B.Sc. Degree in Computer Engineering, Yeditepe University, 2007
Full Education Scholarship, Med Educational Institute, 2001–2002
Full Education Scholarship, Kadro Educational Institute, 2001–2002 (declined)
Full Education Scholarship, Odak Educational Institute, 2000–2002

COMPUTER SKILLS

Programming: *C/C++, Java, Python, Prolog, Assembly, Matlab, Bash Shell*
Computer Graphics: *VRML, QML, OpenSceneGraph*
Web Technologies: *XHTML (CSS), JavaScript, JSP, PHP*
Database Systems: *Oracle, {Ms/My/Postgre}SQL*
Operating Systems: *Linux, Windows*

MEMBERSHIPS

Member, COⁿfiguration and SE^lection of ALgorithms (COSEAL) Group
Member, Task Force on Automated Algorithm Design, Configuration and Selection (AADCS), IEEE Computational Intelligence Society

⁴<http://www.flickr.com/photos/51549378@N04/>

⁵<http://www.asap.cs.nott.ac.uk/external/chesc2011/>

⁶<http://www.kuleuven-kulak.be/nrpscompetition>

Member, Task Force on Hyper-heuristics, IEEE Computational Intelligence Society
Member, Society for Industrial and Applied Mathematics (SIAM)
Member, Marie Curie Alumni Association (MCAA)
Member, Institute of Mathematical Statistics (IMS)
Member, the European Chapter on Metaheuristics (EU/ME)
Member, the EURO Working Group on Combinatorial Optimization (ECCO)
Member, the EURO Working Group on Operational Research Applied to Health Services (ORAHS)
Member, the EURO Working Group on Automated Timetabling (WATT)
Member, Turkish Foundation for Combating Soil Erosion (TEMA)
Former Member, the Belgian Operations Research Society (ORBEL)
Former Member, the OR Society, UK (OR)
Former (Founder) Member, Environmental Club, Yeditepe University
Former Member, Engineering Club, Yeditepe University
Former Member, Computer Society, Yeditepe University

PERSONAL

Born in November, 1985, Turkey
Speaks Turkish (*Native*) and English (*Advanced*)