

## Emrullah SONUÇ, Ph.D.

[esonuc@karabuk.edu.tr](mailto:esonuc@karabuk.edu.tr), [emrullah.sonuc@nottingham.ac.uk](mailto:emrullah.sonuc@nottingham.ac.uk)

<http://www.3mrullah.com>



### Education:

---

Feb.2012 - Jul.2017	Karabuk University, Karabük, Türkiye Ph.D. in Computer Engineering, CGPA 3.65 Thesis Title: Parallelization of Simulated Annealing Algorithm on Graphics Processing Unit.
Feb.2010 - Feb.2012	Karabuk University, Karabük, Türkiye M.Sc. in Computer Engineering, CGPA 3.57 Thesis Title: Verification Of Regcm4 Regional Climate Model Data.
Sep.2006 - Jun.2008	Selcuk University, Konya, Türkiye (Undergraduate transfer) B.S. in Computer Engineering, CGPA 3.01
Sep.2004 - Jun.2006	European University of Lefke, Lefke, TRNC B.S. in Computer Engineering, CGPA 3.58
Sep.1996 - Jun.2003	Karabük Anatolian İmam-Hatip High School, Karabük, Türkiye

### Research Interests:

---

Evolutionary Computation  
Meta-heuristics  
Combinatorial Optimization  
High Performance Computing  
Machine Learning

### Teaching Interests:

---

Theory of Computation  
Digital Logic Circuits and Design  
Database Systems  
Operating Systems  
Web Services

## Academic History:

---

Oct. 2022 – Now	Assist. Prof., Computer Engineering Department, Karabuk University
Oct. 2021 – Now	Research Associate, School of Computer Science (COL Lab), University of Nottingham
Oct. 2021– Oct.2022	Postdoctoral Researcher (Funded By TÜBİTAK), School of Computer Science (COL Lab), University of Nottingham
	Assist. Prof., Computer Engineering Department, Karabuk University
Nov. 2017 – Oct. 2021	Assist. Prof., Computer Engineering Department, Karabuk University
Oct. 2009 – Nov. 2017	Research Assistant, Computer Engineering Department, Karabuk University

## Skills:

---

Spoken Languages:	Intermediate English, native Turkish speaker.
Programming:	C, C++, Java, PHP, Python, CUDA, JavaScript, ...
Operating Systems:	Variuos Distributions of Linux, Windows, Android.
Distributed Computing:	OpenMP, OpenMPI.
Database Administration:	MySQL, PostgreSQL, MariaDB, ...

## International Journal Publications:

---

1. Ahmed, S. R. A., **Sonuç, E.**, “Evaluating the effectiveness of rationale-augmented convolutional neural networks for deepfake detection”, Soft Computing, 2023.
2. Saihood, Q., **Sonuç, E.**, “A practical framework for early detection of diabetes using ensemble machine learning models”, Turkish Journal of Electrical Engineering and Computer Sciences, 31(4), 722-738, 2023.
3. **Sonuç, E.**, Özcan, E., “An adaptive parallel evolutionary algorithm for solving the uncapacitated facility location problem”, Expert Systems with Applications, 119956, 2023.
4. Ahmed, S. R. A., **Sonuç, E.**, “Deepfake detection using rationale-augmented convolutional neural network.” Applied Nanoscience, 13(2), 2023.
5. **Sonuç, E.**, “A novel binary crow search algorithm for the uncapacitated facility location problem”, Neural Computing and Applications, 33, 14669–14685, 2021.
6. **Sonuç, E.**, “A modified crow search algorithm for the weapon-target assignment problem”, An International Journal of Optimization and Control: Theories & Applications (IJOCTA), 10(2), 188-197, 2020.

7. **Sonuç, E.**, Sen, B., Bayir, S., “A cooperative GPU-based Parallel Multistart Simulated Annealing algorithm for Quadratic Assignment Problem”, Engineering Science and Technology, an International Journal, 21 (5), 843-849, 2018.
8. **Sonuç, E.**, Sen, B., Bayir, S., “A Parallel Simulated Annealing Algorithm for Weapon-Target Assignment Problem”, International Journal of Advanced Computer Science and Applications, 8 (4): 87-92, 2017.
9. **Sonuç, E.**, Sen, B., Bayir, S., “Solving Bin Packing Problem using Simulated Annealing”, International Journal of Mechanical and Production Engineering (IJMPE), 5 (3): 21-23, 2017.
10. **Sonuç, E.**, Sen, B., Bayir, S., “A Parallel Approach for Solving 0/1 Knapsack Problem using Simulated Annealing Algorithm on CUDA Platform”, International Journal of Computer Science and Information Security, 14 (12): 1096-1101, 2016.
11. Sen B., Kilinc R., Sen B., **Sonuç E.**, “Validation of a daily precipitation estimates of the regional climate model RegCM4 over the domains in Turkey with NWP verification techniques”, Fresenius Environmental Bulletin, Parlar Scientific Publications, 2014.

#### **International Conference/Workshop Publications:**

---

1. Farzaliyev E., Saihood Q., **Sonuç E.** "Çocuklarda Anemi Hastalığının Teşhisinde Topluluk Öğrenme Yöntemlerinin Kullanılması", International Conference on Recent Academic Studies (Vol. 1, pp. 129-135), 2023.
2. Saihood Q., **Sonuç E.** “The Efficiency of Classification Techniques in Predicting Anemia Among Children: A Comparative Study”, International Conference on Emerging Technology Trends in Internet of Things and Computing (pp. 167-181). Springer, Cham., 2022.
3. Ahmed, S. R., **Sonuç E.**, Ahmed, M. R., Duru, A. D. “Analysis Survey on Deepfake detection and Recognition with Convolutional Neural Networks.”, International Congress on Human-Computer Interaction, Optimization and Robotic Applications (HORA). IEEE, 2022.
4. Salman K., **Sonuç E.** “Thyroid Disease Classification Using Machine Learning Algorithms”, 2nd International Conference on Physics and Applied Sciences (ICPAS), 2021.
5. Özcan E., **Sonuç E.** “Predicting the Amount of Materials Used for Desulphurization Process using Machine Learning”, 1st International Conference on Electrical-Electronics and Computer Engineering (ICEECE), 2021, Trabzon-Türkiye
6. Aswad S.A., **Sonuç E.** “Classification of VPN Network Traffic Flow Using Time Related Features on Apache Spark”, 4th International Symposium on Multidisciplinary Studies and Innovative Technologies (ISMSIT), IEEE, 2020.
7. **Sonuç E.**, Dönmez H. “Binary optimization using duelist optimization algorithm for One Max Problem”, 3rd International Conference on Advanced Technologies, Computer Engineering and Science (ICATCES20), June 3-5, 2020, Karabük - TURKEY.

8. **Sonuç E.**, “An Improved Crow Search Algorithm for Continuous Optimization Problems”, 2nd International Conference on Advanced Technologies, Computer Engineering and Science (ICATCES19), Apr 26-28, 2019, Alanya - TURKEY.
9. **Sonuç E.**, “Artificial Bee Colony Algorithm for The Linear Ordering Problem”, International Conference on Advanced Technologies, Computer Engineering and Science (ICATCES18), May 11-13, 2018, Safranbolu – TURKEY.
10. **Sonuç E.**, Sen B., Bayir S., “Comparison of Neighborhood Search Techniques for Solving Weapon-Target Assignment Problem using Simulated Annealing Algorithm”, International Conference on Mathematics and Engineering (ICOME), 10-12 May 2017, Istanbul – TURKEY.
11. **Sonuç E.**, “An Efficient Heuristic for Subset Sum Problem”, International Conference on Mathematics and Engineering (ICOME), 10-12 May 2017, Istanbul – TURKEY.
12. **Sonuç E.**, Sen B., Bayir S., “Solving Bin Packing Problem using Simulated Annealing”, Proceedings of 65th ISERD International Conference, Mecca, Saudi Arabia, 23rd -24th January 2017, ISBN: 978-93-86291-92-96th.
13. Sen B., Sen B., **Sonuç E.**, Topcu S., Krichak S.O., Kilinc R., “Assessing the capturing capacity of RegCM4 for the precipitation over Med-CORDEX using boundary data with higher resolution and improved accuracy”, 6th ICTP Workshop on The Theory and Use Of Regional Climate Models, 7-18 May 2012, Trieste – ITALY.
14. **Sonuç E.**, Sen Ba., Sen Bu., “Verifying Regional Climate Model Results with Web-Based Expert-System”, 1st World Conference on Innovation and Software Development Bahcesehir University, 02-04 September 2011, Istanbul – TURKEY.
15. Menemencioglu O., Sen B., Atasoy F., **Sonuç E.**, “LMS (Moodle) Automatic Enrollment Approach by Flat File with Student Information System Data”, 2nd World Conference On Information Technology, 22-27 November 2011, Antalya – TURKEY.

### **National Journal Publications:**

---

1. Özcan, E., **Sonuç E.**, “Makine Öğrenme Teknikleri Kullanılarak Kükürt Giderme İşleminde Kullanılan Malzeme Miktarının Tahmini”, Zeki Sistemler Teori ve Uygulamaları, 5(1), 57-63, 2022.
2. Demirel, O., **Sonuç, E.**, “Yapay Zeka Teknikleri Kullanılarak Kemik Yaşı Tespiti”, Türkiye Sağlık Enstitüleri Başkanlığı Dergisi, 4(3), 17-30, 2021.

### **National Conference Publications:**

---

1. **Sonuç E.**, Sen B., Bayir S., “Simulated Annealing Method for Solving Traveling Salesman Problem Using Parallel Computing, Akademik Bilişim 2015, 04-06 Şubat 2015, Eskişehir.
2. **Sonuç E.**, ORTAKCI Y., ELEN A., “Android Application of Karabuk University Information System”, Akademik Bilişim 2013, 23-25 January 2013, Antalya – TURKEY

3. Menemencioglu O., **Sonuç E.**, Karas I.R., Orak I.M., “Academic Curriculum Vitae Based Faculty Information System”, Akademik Bilişim 2013, 23-25 January 2013, Antalya – TURKEY.
4. Sen B., Kilinc R., Sen B., **Sonuç E.**, “RegCM4 Climate Model Precipitation Verification For Niğde Region”, 2-4 October 2013, İç Anadolu Bölgesi 1. Tarım ve Gıda Kongresi, Niğde-TURKEY.

### **Projects:**

---

1. Researcher, Karabuk University, SRCU, Project Number: KBÜ-BAP-15/2-DR-027, Project Name: “Parallelization of Simulated Annealing Algorithm on Graphics Processing Unit and Its Implementation on NP-hard Problems”, 2017
2. Assistant Personnel, (National) Industrial Theses Program (SAN-TEZ), Yıldırım Beyazıt University, Project Number: 1318.STZ.2012-1, Project Name: “e-Triage Decision Support System Software”, 2012-2014
3. Researcher, Karabuk University, SRCU, Project Number: KBÜ-BAP-C-11-Y-016, Project Name: “Verification of Regcm4 Regional Climate Model Data”, 2011

### **Academic Service:**

---

Assistant Editor-in-Chief, Engineering Science and Technology, an International Journal (JESTECH), Elsevier

Reviewer, Swarm and Evolutionary Computation (Elsevier)

Reviewer, Engineering Applications of Artificial Intelligence (Elsevier)

Reviewer, Expert Systems with Applications (Elsevier)

Reviewer, Computers & Industrial Engineering (Elsevier)

Reviewer, Turkish Journal of Electrical Engineering and Computer Sciences (TÜBITAK)

Reviewer, The Journal of Supercomputing (Springer)

Reviewer, Multimedia Tools and Applications (Springer)

Reviewer, Cluster Computing (Springer)

Reviewer, Imaging Science Journal (Taylor & Francis)

Reviewer, Journal of Aerospace Information Systems

Reviewer, Computational Intelligence and Neuroscience

Reviewer, Applied Sciences

Reviewer, Pamukkale University Journal of Engineering Sciences

Reviewer, Akademik Bilişim Conferences