Kemal İhsan Kiliç
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Education

- PhD. in Computer Science, Univ. of Camerino, 2022 (**July, expected**), Camerino, Italy
- MSc. in Sustainable Environment and Energy Systems, Middle East Technical University, Northern Cyprus Campus, 2018, Güzelyurt, Cyprus
- MSc. in Computer Science, University of Maryland, 1998, College Park, MD, USA
- BSc. in Computer Engineering, Boğaziçi University, 1994, Istanbul, Turkey

Work Experience

- **2019 - Today, PhD. Student:** Department of Computer Science, University of Camerino, Camerino, Italy. Researched in Optimization, Drones, WSN, Distributed Systems, Computer Vision, Human Pose Detection, Robotic Arms.
- **2016 - 2019, Teaching Assistant:** Dept. of Computer Engineering, Middle East Technical University, North Cyprus Campus, Güzelyurt, Cyprus. Worked as a teaching assistant and studied for MSc. in Dept. of Sustainable Environment and Energy Systems.
  Courses assisted:
  - Introduction to C Programming
  - C Programming
  - Python Programming
  - Data Structures
  - Algorithms
  - Statistics for Economists: R Lab
  - Discrete Computational Structures
  - Introduction to Operating Systems
  - Programming Language Concepts
  - Formal Languages and Abstract Machines
- **2007 - 2015, Instructor:** Dept. of Computer Engineering, Near East University, Nicosia, Cyprus. Taught various Computer Engineering courses and researched in Texture Recognition.
  Courses taught:
  - Introductory C Programming
  - Computer Networks
  - Software Engineering
  - Discrete Structures
- **1996 - 1998, Research Assistant:** Dept. of Computer Science, University of Maryland, College Park. Studied on Duplicate Detection in Large Document Databases in CfAR. Researched in Multimedia Databases Lab, MD, USA.
- **1993 Summer Training:** Software Engineer, Promax, C programming and UNIX Platform, Istanbul, Turkey.

Relevant Skills

- **PhD topic (Computer Science):** Geometry-Based Optimization Heuristics for Region Coverage and Pathfinding in Drone-Based Operations. I proposed a flexible Evolutionary Algorithm (EA) based multi-objective multi-party optimisation scheme for disaster region communication coverage and a framework for heuristic drone pathfinding over an optimised charging station grid for "visiting" entities in a "covered region". The boat rescue case study is presented

as an application of the proposed framework." The thesis involves topics as Graph Theory, Optimization, Combinatorics, $\mathcal{NP}$-Completeness, Evolutionary Algorithms, Probability Analysis, Statistical Analysis and Testing, Heuristics, TSP. Coding is done in R language and Linux shell scripting.

- **Reviewer Activities:**
  - Certificate of Excellence from Certified Peer Reviewer Course, Elsevier Research Academy, awarded May-18-2021
  - I have reviewed for:
    * Aging and Disease
    * Computer Communication, Elsevier
    * Expert Systems, Wiley
    * International Journal of Pattern Recognition and Artificial Intelligence
    * Physica A: Statistical Mechanics And Its Applications, Elsevier
    * Sustainable Cities and Society, Elsevier
    * Wireless Communications and Mobile Computing, Hindawi-Wiley
- **Analytical reasoning:** I am good at seeing the parallelism between diverse topics and finding research gaps. I can classify/categorize existing approaches into an organized literature review.
- **Strong problem-solving attitude:** My multidisciplinary background and creative nature gives me flexibility in proposing novel solutions.
- **Strong communication and English language skills (written and spoken):** I have about 10 years (7 as instructor + 3 as TA) of teaching experience at the institutions where English was the language of education. I stayed about 5 years in the USA.
- **Teamwork:** I have many experiences in various collaborative research projects and faculty board meetings.
- **The ability to properly report, organize and publish research data:** I have publication experiences in various Computer Science fields like Biometrics, Networks, and Heuristics.

Additional Skills

- Passionate hobbyist for robotics and IoT projects with Arduino, RaspberryPi, DJI-Tello, and JetsonNano.
- Developed prototype webcam based human pose detection software (Python, OpenCV) as part of the collaborative project (Urrà: Robot Usability and Process Reconfigurability) with the Università Politecnica delle Marche.
- Basic electronics, soldering, building breadboard prototypes. Practical experience with various sensors (ultrasonic, PIR, etc...) types. Practical experience with step motors, servos (Developed Arduino sketch for running multiple servos at the same time for "smooth" robot arm movements: https://github.com/kk-1/robot-arm-demos.
- Linux, R, OpenCV, Python, LaTeX
- Advance level (not certified) of Italian
- Collaboration with Electrical Engineering Department for developing a fractal antenna as a part of my MSc. thesis titled "Energy Efficient Routing With Directional Antennas In Wireless Sensor Networks"(https://github.com/kk-1/metu-msc-thesis)

Publications

[1] Kemal Ihsan Kilic and Leonardo Mostarda. Novel Concave Hull-Based Heuristic Algorithm For TSP. *Operations Research Forum*, 3(2):25, 2022. https://doi.org/10.1007/s43069-022-00137-9.

[2] Kemal Ihsan Kilic and Leonardo Mostarda. Heuristic Drone Pathfinding Over Optimized Charging Station Grid. *IEEE Access*, 9:164070–164089, 2021. https://doi.org/10.1109/ACCESS.2021.3134459.

[3] Kemal Ihsan Kilic and Leonardo Mostarda. Optimum Path Finding Framework for Drone Assisted Boat Rescue Missions. In Leonard Barolli, Isaac Woungang, and Tomoya Enokido, editors, *Advanced Information Networking and Applications*, pages 219–231. Springer International Publishing, Cham, 2021. https://doi.org/10.1007/978-3-030-75078-7_23.

[4] Kemal Ihsan Kilic, Orhan Gemikonakli, and Leonardo Mostarda. Voronoi Tesselation-based load-balanced multi-objective priority-based heuristic optimisation for multi-cell region coverage with UAVs. *International Journal of Web and Grid Services*, 17(2):152–178, 2021. https://doi.org/10.1504/IJWGS.2021.114574.

[5] K. I. Kilic, O. Gemikonakli, and L. Mostarda. Multi-objective Priority Based Heuristic Optimization for Region Coverage with UAVs. In L. Barolli, F. Amato, F. Moscato, T. Enokido, and M. Takizawa, editors, *Advanced Information Networking and Applications*, pages 768–779. Springer International Publishing, 2020. https://doi.org/10.1007/978-3-030-44041-1_68.

[6] F. Al-Turjman and K.I. Kilic. Energy-Aware Routing Protocol for Nanosensor Networks. In Fadi Al-Turjman, editor, *Internet of Nano-Things and Wireless Body Area Networks (WBAN)*, chapter 9. CRC Press, Boca Raton, FL, 2019. https://doi.org/10.1201/9780429243707.

[7] F. Al-Turjman and K.I. Kilic. Lagoon: A simple energy-aware routing protocol for wireless nano-sensor networks. *IET Wireless Sensor Systems*, 9(3):110–118, 2019. https://doi.org/10.1049/iet-wss.2018.5079.

[8] Kemal Ihsan Kilic and Rahib Hidayat Abiyev. Exploiting the synergy between fractal dimension and lacunarity for improved texture recognition. *Signal Processing*, 91(10):2332–2344, 2011. https://doi.org/10.1016/j.sigpro.2011.04.018.

[9] Rahib Hidayat Abiyev and Kemal Ihsan Kilic. Robust Feature Extraction and Iris Recognition for Biometric Personal Identification. In Zahid Riaz, editor, *Biometric Systems*, chapter 9. IntechOpen, Rijeka, 2011. https://doi.org/10.5772/18374.

[10] Rahib Abiyev and Kemal Ihsan Kilic. An efficient fractal measure for image texture recognition. In *2009 Fifth International Conference on Soft Computing, Computing with Words and Perceptions in System Analysis, Decision and Control*, pages 1–4, 2009. https://doi.org/10.1109/ICSCCW.2009.5379454.

[11] Rahib Abiyev and Kemal Kilic. Adaptive Iris Segmentation. In Jong Hyuk Park, Hsiao-Hwa Chen, Mohammed Atiquzzaman, Changhoon Lee, Tai-hoon Kim, and Sang-Soo Yeo, editors, *Advances in Information Security and Assurance*, pages 90–99, Berlin, Heidelberg, 2009. Springer Berlin Heidelberg. https://doi.org/10.1007/978-3-642-02617-1_10.

[12] Eenjun Hwang, Kemal Kilic, and V. S. Subrahmanian. Handling Updates and Crashes in VoD Systems. *Multimedia Tools and Applications*, 7:103–132, 1998. https://doi.org/10.1023/A:1009626304548.