Mehmet Karahan, Ph.D.

Assistant Professor

Atılım University

Department of Electrical and Electronics Engineering

06830 İncek, Gölbaşı, Ankara/TURKEY

mehmet.karahan@atilim.edu.tr

Tel: +90 312 586 80 00

**PERSONAL**

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| --- | --- |
| Date of Birth | 15.10.1992 |
| **Place of Birth** | Ankara |

# EDUCATION

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| --- | --- |
| 2020-2023 | TOBB University of Economics and Technology, Electrical and Electronics Engineering, Ph.D. |
| 2017-2019 | TOBB University of Economics and Technology, Electrical and Electronics Engineering, M.S. |
| 2012-2017 | TOBB University of Economics and Technology, Electrical and Electronics Engineering, B.S. |
| 2011-2012 | TOBB University of Economics and Technology, English Preparatory School |

# ACADEMIC POSITIONS

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| --- | --- |
| **August/2024- present** | Assistant Professor, Department of Electrical and Electronics Engineering, Atilim University, Turkey |
| **September/2023-May/2024** | Adjunct Assistant Professor, Department of Electrical and Electronics Engineering, TOBB University of Economics and Technology, Turkey |
| **January/2020-August/2023** | Research and Teaching Assistant, Department of Electrical and Electronics Engineering, TOBB University of Economics and Technology, Turkey |

**ADMINISTRATIVE DUTIES**

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| March 2021 – August 2023 | Chairman of the Students Council, TOBB University of Economics and Technology |
| March 2021 – August 2023 | Representative of the Graduate School of Natural and Applied Sciences, Students Council, TOBB University of Economics and Technology |
| March 2021 – August 2023 | Representative of the Graduate Electrical and Electronics Engineering Students, Students Council, TOBB University of Economics and Technology |

**RESEARCH INTERESTS**

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| 1 | Control Systems |
| **2** | Quadrotor Unmanned Aerial Vehicles |
| **3** | Image Processing |

**PUBLICATIONS (SCIE)**

|  |  |
| --- | --- |
| 1 | Karahan, M. (2024). Nonlinear Modelling and Robust Backstepping Control of a Quadcopter UAV in Aggressive Maneuvering. Studies in Informatics and Control, vol. 33(3), pp. 29-38. |
| **2** | Karahan, M., Kasnakoglu, C., & Akay, A. N. (2023). Robust backstepping control of a quadrotor uav under pink noise and sinusoidal disturbance. Studies in Informatics and Control, vol. 32(2), pp. 15-24. |
| **3** | Karahan, M., & Kasnakoglu, C. (2021). Modeling a Quadrotor Unmanned Aerial Vehicle and robustness analysis of different controller designs under parameter uncertainty and noise disturbance. Journal of Control Engineering and Applied Informatics, vol. 23(4), pp. 13-24. |

**PUBLICATIONS (SCOPUS)**

|  |  |
| --- | --- |
| 1 | Karahan, M., Inal, M., & Kasnakoglu, C. (2023). Fault Tolerant Super Twisting Sliding Mode Control of a Quadrotor UAV Using Control Allocation. International Journal of Robotics and Control Systems, vol. 3(2), pp. 270-285. |
| **2** | Karahan, M., Lacinkaya, F., Erdonmez, K., Eminagaoglu, E. D., & Kasnakoglu, C. (2022). Age and gender classification from facial features and object detection with machine learning. Journal of fuzzy extension and applications, vol. 3(3), pp. 219-230. |

**PUBLICATIONS (OTHER INDEXES)**

|  |  |
| --- | --- |
| 1 | Karahan, M. (2024). Reinforcement Learning and PD Control Based Trajectory Tracking for a Quadcopter UAV Journal of Computer Science and Technology Studies [accepted for publication] |
| 2 | Karahan, M. (2024). Feedback Linearized Model Predictive Control of a Two Link Robot Arm. International Journal of Multidisciplinary Studies and Innovative Technologies, vol. 8(1), pp. 35-39. |
| **3** | Karahan, M., Inal, M., Dilmen, A., Lacinkaya, F., Akay, A. N., & Kasnakoglu, C. (2024). Microstrip Patch Antenna Design at 10 GHz for X Band Applications. European Journal of Theoretical and Applied Sciences, vol. 2(1), pp. 384-393. |
| **4** | Karahan, M., Inal, M., & Yetik, I. S. (2023). Detection of the Flying Bees Using Morphological Image Processing. International Journal of Engineering Research and Development, vol. 19(6), pp. 100-106. |

**HONOURS & AWARDS**

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| --- | --- |
| 1 | 2211-C National PhD Scholarship Program in the Priority Fields in Science and Technology, The Scientific and Technological Research Council of Turkey (TUBITAK) |
| **2** | The Special Merit PhD Scholarship, TOBB University of Economics and Technology |

**PROFESSIONAL SERVICES**

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| 1 | Reviewer, Engineering Applications of Artificial Intelligence Journal |
| **2** | Reviewer, Heliyon Journal |
| **3** | Reviewer, IEEE Access Journal |
| **4** | Reviewer, Studies in Informatic and Control |
| **5** | Reviewer, International Journal of Advanced Robotic Systems |
| **6** | Reviewer, International Journal of Fuzzy Extension and Applications |
| **7** | Reviewer, Journal of Productivity |
| **8** | Reviewer, The 6th International Conference on Computer Science and Application Engineering (CSAE 2022), October 21-22, Nanjing, China, ACM. |
| **9** | Reviewer, International Conference on Computer Technology and Information Science (CTIS 2023), June 17-19, Wuhan, China, IOP. |
| **10** | Reviewer, The 2nd International Conference on Mechanical Automation and Engineering Materials, August 2-4, Hangzhou, China, IOP. |
| **11** | Member of the IEEE, IEEE Young Professionals, IEEE Aerospace and Electronic Systems Society and IEEE Information Theory Society |
| **12** | Member of the Chamber of Electrical Engineers of Turkey |
| **13** | Quality Ambassador at The Council of Higher Education of Turkey (February 2021-August 2023) |

**CERTIFICATES**

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| --- | --- |
| 1 | C for Everyone: Programming Fundamentals, University of California Santa Cruz, March 2024 |
| **2** | Unity 201 Mobile Game Development, Turkcell, May 2022 |
| **3** | Unity 101 Mobile Game Development, Turkcell, April 2022 |
| **4** | Introduction to Solar Cells, Technical University of Denmark, April 2022 |
| **5** | Programming Fundamentals, Duke University, September 2021 |
| **6** | CS50's Introduction to Programming with Scratch, Harvard University, July 2021 |
| **7** | Machine Learning, Stanford University, June 2021 |
| **8** | Practical Machine Learning, The Johns Hopkins University, December 2020 |
| **9** | Introduction to AI, IBM, October 2020 |
| **10** | Programming for Everybody, (Getting Started with Python), Michigan University, June 2020 |
| **11** | Researcher Academy on Campus Seminar Series, Elsevier, May 2020 |
| **12** | Leadership Camp Certificate, TOBB University of Economics and Technology, March 2018 |
| **13** | Goethe Zertifikat A2, Goethe-Institut e.V., October 2016 |

**CONFERENCE PRESENTATIONS**

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| --- | --- |
| 1 | Karahan, M. (2024). Optimal Trajectory Tracking Control for a Quadrotor UAV Based on Off-Policy Reinforcement Learning. In 2024 6th International Congress on Human-Computer Interaction, Optimization and Robotic Applications (ICHORA), May 23-25, Istanbul, Turkey, (pp. 1-5). IEEE. |
| **2** | Karahan, M. (2024). Modeling of a DC Motor and Position Angle Control Using Optimized PID Controller. In 2024 11th International Conference on Electrical and Electronics Engineering (ICEEE), April 22-24, Mugla, Turkey, (pp. 1-4). IEEE. |
| **3** | Karahan, M., Lacinkaya, F., Inal, M., Dilmen, A., Akay, A.N., & Kasnakoglu, C. (2023). Detection of the Coordinates of the Bee Swarm in the Sky Through Image Processing. In 2023 6th International Conference on Sustainable Science and Technology (ICSuSaT), July 14-16, Istanbul, Turkey. |
| **4** | Karahan, M., Dilmen, A., Lacinkaya, F., Akay, A. N., & Kasnakoglu, C. (2023). Track While Scan Radar Design and Simulation. In 2023 13th International Symposium on Advanced Topics in Electrical Engineering (ATEE), March 23-25, Bucharest, Romania, (pp. 1-4). IEEE. |
| **5** | Karahan, M., & Kasnakoglu, C. (2022). Nonlinear Modeling and Lyapunov Stability Based Controller Design of a Quadrotor UAV. In 2022 3rd International Informatics and Software Engineering Conference (IISEC), December 15-16, Ankara, Turkey, (pp. 1-6). IEEE. |
| **6** | Karahan, M., Kurt, H., & Kasnakoglu, C. (2022). Moving object detection and counting in traffic with gaussian mixture models and vehicle license plate recognition with Prewitt Method. In 2022 International Symposium on Multidisciplinary Studies and Innovative Technologies (ISMSIT), October 20-22, Ankara, Turkey, (pp. 32-36). IEEE. |
| **7** | Karahan, M., & Kasnakoglu, C. (2022). Nonlinear Modeling and Robust Backstepping Control of a Quadrotor Unmanned Aerial Vehicle. In 2022 5th International Conference of Computer and Informatics Engineering (IC2IE), September 13-14, Jakarta, Indonesia, (pp. 94-99). IEEE. |
| **8** | Karahan, M., & Kasnakoglu, C. (2022). Robust Backstepping Control of a Quadrotor Unmanned Aerial Vehicle under Pink Noise, In 2022 10th The International Conference on Modern Practice in Stress and Vibration Analysis, July 12-14, St. Anne’s College, Oxford, UK. |
| **9** | Karahan, M., & Kasnakoglu, C. (2022). LQR Control and Observer Design of a Magnetically Suspended Ball. In 2022 International Congress on Human-Computer Interaction, Optimization and Robotic Applications (HORA), June 9-11, Ankara, Turkey, (pp. 1-4). IEEE. |
| **10** | Karahan, M., & Kasnakoglu, C. (2022). Stability Analysis and Optimum Controller Design for an Inverted Pendulum on Cart System. In 2022 International Conference on Smart Information Systems and Technologies (SIST), April 28-30, Nur-Sultan, Kazakhstan, (pp. 1-4). IEEE. |
| **11** | Karahan, M., Akay, A. N., & Kasnakoglu, C. (2021). Nonlinear Modeling and Robust Control of a Quadrotor UAV under Uncertain Parameters and White Gaussian Noise. In 2021 5th International Symposium on Multidisciplinary Studies and Innovative Technologies (ISMSIT), October 21-23, Ankara, Turkey, (pp. 252-256). IEEE. |
| **12** | Karahan, M., & Kasnakoglu, C. (2021). Path planning and collision avoidance with artificial intelligence for a quadrotor UAV. In 2021 International Conference Automatics and Informatics (ICAI), September 30-October 2, Varna, Bulgaria, (pp. 163-166). IEEE. |
| **13** | Karahan, M., Lacinkaya, F., Erdonmez, K., Eminagaoglu, E. D., & Kasnakoglu, C. (2021). Face detection and facial feature extraction with machine learning. In 2021 3rd International Conference on Intelligent and Fuzzy Systems (INFUS), August 24-26, Istanbul, Turkey, (pp. 205-213). Springer International Publishing. |
| **14** | Karahan, M., Kurt, H., & Kasnakoglu, C. (2020). Autonomous face detection and tracking using quadrotor UAV. In 2020 4th international symposium on multidisciplinary studies and innovative technologies (ISMSIT), October 22-24, Istanbul, Turkey, (pp. 1-4). IEEE. |
| **15** | Karahan, M., & Kasnakoglu, C. (2019). Modeling and simulation of quadrotor UAV using PID controller. In 2019 11th International Conference on Electronics, Computers and Artificial Intelligence (ECAI), June 27-29, Pitesti, Romania, (pp. 1-4). IEEE. |

**CITATIONS**

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| Sum of times cited without self-citations (ISI Web of Science): | 18 |
| H-index (ISI Web of Science): | 2 |

**COURSES GIVEN**

|  |  |
| --- | --- |
| 1 | EE 203 Digital Circuits and Systems |
| 2 | EE 493 Engineering Design Project I |
| **3** | ELE 515 Computational Control with MATLAB |
| **4** | ELE 297 Fundamentals of Electrical and Electronics Engineering |

**THESES SUPERVISED**

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| **1** | Mertcan Inal, Analyzing fault tolerances by developing linear and nonlinear controllers for multirotor systems, MSc Thesis, Electrical and Electronics Engineering, TOBB University of Economics and Technology, 2023 (Co-supervisor) |