KHALID MUNAWAR

Professor, Department of Electrical and Computer Engineering, King Abdulaziz University

Education

Degree	Field	Institution	Year
PhD	Aeronauts & Space Engineering	Tohoku University, Sendai, Japan	2000
MS	Aeronauts & Space Engineering	Tohoku University, Sendai, Japan	1997
BS	Electrical Engineering	UET Lahore, Pakistan	1992

Academic Experience

From	To	Institution	Rank	Title	Full/ Part Time
1992	1994	UET Lahore, Pakistan	RA/Lecturer		Full Time
1997	1999	Tohoku University, Sendai, Japan	Teaching Assistant		Part Time
2001	2002	Tohoku University, Sendai, Japan	Assistant Professor		Full Time
2002	2004	NUST, Islamabad, Pakistan	Assistant Professor		Full Time
2004	2008	NUST, Islamabad, Pakistan	Associate Professor		Full Time
2008	2011	NUST, Islamabad, Pakistan	Professor		Full Time
2011	2012	Qassim University, KSA	Professor		Full Time
2012	Date	King Abdulaziz Univ., KSA	Professor		Full Time

Non-Academic Experience (Including Consultations)

From	To	Company/Entity	Title	Position Description	Full/Part Time
1992	1994	UET Lahore, Pakistan	Research Associate	R&D Projects	Full Time
1993	1993	Bismillah Electronics, Lahore, Pak.	R&D Engineer	R&D Projects	Part Time
1994	1995	Tohoku University, Sendai, Japan	Research Student	R&D Projects	Full Time
1999	1999	Tohoku University, Sendai, Japan	Research Assistant	R&D Projects	Part Time
2000	2001	Tohoku University, Sendai, Japan	Postdoctoral Fellow	R&D Projects	Full Time

Funded Research Projects and Patents from the Last Five Years

1. Deanship of Scientific Research (DSR), King Abdulaziz University, 1–year grant worth SAR 0.2 million to execute the project, "*Development of a Distributed Autonomous Coordination Control of Multiple Agents (Robots)*," 2017.
2. Center of Excellence in Intelligent Engineering Systems (CEIES), King Abdulaziz University, 1–year grant worth SAR 0.12 million to execute project, "*HW-SW Co-Design of SLAM for Mobile Robots*," 2018.

Honors and Awards

1. Government of Pakistan, Ministry of Science & Technology (MoST), S&T Scholarship for 6–years postgraduate studies (MS + PhD) at Tohoku University of Sendai, Japan (1994 to 2000).
2. "Overall Best Project Prize" in All-Pakistan Computer Programming and Engineering Competition (COMPPEC) in 2006, 2008, 2009; 2nd and 3rd Prize in Control / Automated Systems category in 2009; 1st Prize in Utilities category in 2010.
3. ***Best Paper Award*** of the *International Conference on Intelligent and Advanced Systems (ICIAS2016)* in Malaysia for the following paper: Salman Shaukat, Khalid Munawar, Muhammad Arif, Aamer Bhatti, Umar Iqbal Bhatti and Ubaid Al-Saggaf, "Robust Vehicle Localization with GPS Dropouts."

Institutional and Professional Services

1. Supervised/co-supervised 7 PhD theses, more than 20 MS theses; almost 100 UG senior design projects.

2. Member/convener of Pakistan Engineering Council (PEC) Accreditation Committees from 2007 to 2012.
3. Member of National Curriculum Design Committees of Higher Education Commission (HEC) of Pakistan for Electrical/Electronics and Mechatronics Engineering programs.
4. Member of the Electrical Engineering Postgraduate Academic Council of University of Engineering & Technology Taxila, and Centre for Advanced Studies in Engineering (CASE), Islamabad, Pakistan.
5. Member of the ABET committee, member and convener of the Senior Design Project committee of the Electrical & Computer Engineering Department, King Abdulaziz University, Jeddah, KSA.
6. Member of the Center of Excellence for Intelligent Engineering Systems (CEIES), College of Engineering, King Abdulaziz University, Jeddah, KSA.

Principal Publications/Presentations from the Past Five Years

[1] Zeeshan H. Khan, Muhammad Arif, Ahmed. J. Kattan, Salman Ali and **Khalid Munawar**, "Pedestrian Tracking Using MEMS based Wireless Inertial Measurement Unit*," The 4th International Conference on Computer Engineering and Mathematical Sciences (ICCEMS 2015)*, pp. 19–24, 2015.

[2] Syed Ussama Ali, Raza Samar, M. Zamurad Shah, Aamer I. Bhatti, **Khalid Munawar** and Ubaid M. Al-Sggaf, "Lateral Guidance and Control of UAVs using Second-Order Sliding Modes," *Elsevier Journal of Aerospace Science and Technology*, vol. 49, pp. 88–100, DOI:10.1016/j.ast.2015.11.033, 2016.

[3] Maaz M. Butt, Umar I. Bhatti, **Khalid Munawar**, Sohail Iqbal, Ubaid M. Al-Saggaf and Washington Ochieng, "4D Trajectory Generation for Guidance Module of a UAV for a Gate to Gate Flight in Presence of Turbulence," *International Journal of Advanced Robotic Systems*, vol.13, no. 125, ISSN: 1729-8806, Intech Publishers, 13:125, DOI: 10.5772/64063, 2016.

[4] Belkacem Kada, **Khalid Munawar**, Muhammad Shafique Shaikh, Mohammed Abdullah Hussaini and Ubaid Al-Saggaf, "UAV Attitude Estimation using Nonlinear Filtering and Low-Cost MEMS Sensors," *IFAC-PapaersOnLine,* vol. 49, issue 21, pp. 521-528, DOI: 10.1016/j.ifacol.2016.10.655, 2016.

[5] Muhammad Bilal, **Khalid Munawar**, Muhammad Shafique Shaikh and Ubaid M. Al-Saggaf, "Resource-Optimized Bare-Metal DSP Implementation of UAV Flight Control Software," *Proc. of 2016 Int. Conf. on Intelligent and Autonomous Systems (ICIAS2016)*, DOI: 10.1109/ICIAS.2016.7824125, 2016.

[6] Muhammad Saim, **Khalid Munawar**, Muhammad Moinuddin and Ubaid Al-Saggaf, "A Localization Approach in a Distributed Multi-Agent Environment," *Proc. of 2016 Int. Conf. on Intelligent and Autonomous Systems (ICIAS2016)*, DOI: 10.1109/ICIAS.2016.7824113, 2016.

[7] Salman Shaukat, **Khalid Munawar**, Muhammad Arif, Aamer Iqbal Bhatti, Umar Iqbal Bhatti and Ubaid Al-Saggaf, "Robust Vehicle Localization with GPS Dropouts," *Proc. of 2016 Int. Conf. on Intelligent and Autonomous Systems (ICIAS2016)*, DOI: 10.1109/ICIAS.2016.7824135, 2016.

[8] Belkacem Kada, **Khalid Munawar**, Muhammad Shafique Shaikh, Mohammed Abdullah Hussaini and Ubaid Al-Saggaf, "UAV Attitude Estimation using Nonlinear Filtering and Low-Cost MEMS Sensors," *Proc. of 7th IFAC Symposium on Mechatronic Systems*, DOI: 10.1016/j.ifacol.2016.10.655, 2016.

[9] Syed Ussama Ali, Raza Samar, M Zamurad Shah, Aamer I Bhatti and **Khalid Munawar**, "Higher-Order Sliding Mode Based Lateral Guidance for Unmanned Aerial Vehicles," *Transactions of the Institute of Measurement and Control*, vol. 39, issue 5, pp. 715-727, DOI: 10.1177/0142331215619972, 2017.

[10] Muhammad Saim, **Khalid Munawar** and Ubaid Al-Saggaf, "An Overview of Localization Methods for Multi-Agent Systems," Int. Journal of Engineering Research and Application (IJERA), ISSN: 2248-9622, vol. 7, issue-1, (Part -IV), pp. 19–24, DOI: 10.9790/9622-0701041924, 2017.

[11] Muhammad Saim, Sheida Ghapani, Wei Ren, **Khalid Munawar** and Ubaid M. Al-Saggaf, "Distributed Average Tracking in Multi-Agent Coordination: Extensions and Experiments," *IEEE Systems Journal*, vol. 12, issue 3, pp. 2428-2436, DOI: 10.1109/JSYST.2017.2685465, 2018.

[12] S. M. Dildar Ali, U. Iqbal Bhatti, **Khalid Munawar**, U. Al-Saggaf, Shoaib Mansoor and Jamshaid Ali, "Gyroscopic Drift Compensation by Using Low Cost Sensors for Improved Attitude Determination," *Elsevier Measurement Journal*, vol. 116, pp. 199–206, DOI: 10.1016/j.measurement.2017.11.003, 2018.

[13] M. Shehzad Hanif, Mohammad Bilal, **Khalid Munawar** and Abdullah S. Balamesh, "Implementation of an Embedded Testbed for SLAM," *15th ACS/IEEE Int. Conf. on Computer Systems and Applications AICCSA 2018*, DOI: 10.1109/AICCSA.2018.8612782, 2018.