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Positions	Ain Shams University , Cairo, Egypt
10/2025 – Present	<i>Faculty of Engineering, Vice Dean For Education and Students Affairs:</i> Responsible for academic supervision, student welfare and activities, curriculum management, and student support and conduct.
3/2019 – 3/2026	Ain Shams University , Cairo, Egypt <i>Head of Automotive Engineering Department:</i> Responsible for leading the Automotive Engineering department academic and administrative activities and ensure the quality of operations as well as prepare the department development plan and follow up.
9/2020 – 9/2024	Ain Shams University , Cairo, Egypt <i>Faculty of Engineering, Innovation Hub Satellite Director:</i> Responsible for students training programs as well as international competitions. Manage different project managers and coordinators to execute student capacity building projects.
9/2019 – 9/2023	Ain Shams University , Cairo, Egypt <i>Head of Specialized Engineering Programs Control:</i> Responsible for final results proofing and approvals and manage all departmental control units.
8/2018 - Present	Ain Shams University , Cairo, Egypt <i>Automotive Engineering Consultancy Unit Board Member:</i> Lead and participated in multiple automotive design and approval projects for local manufacturing and assembly factories.
9/2017 – 8/2020	Ain Shams University , Cairo, Egypt <i>Innovation Hub Vice Director:</i> Responsible for students training programs as well as international competitions. Manage different project managers and coordinators to execute student capacity building projects. Major achievement is organizing the electric vehicle rally EVER for three consecutive years at the new Administrative Capital and at the Giza Pyramids.
9/2016 – Present	Ain Shams University , Cairo, Egypt <i>Autotronics Research Lab Director:</i> Manage a group of postgraduate students applying research in the field of Mechatronics applications in Automotive as well as coordinating with professors from different disciplines and Universities. The main focus is development in the field of Autonomous Vehicles. Current Project: Building a level four autonomous electric bus for confined environments funded by ITIDA and STDF.
6/2016 – Present	MATGR , Cairo, Egypt <i>Engineering Development Consultant:</i> Matgr is an Egyptian mobility solution company, Consult the management for the introduction of new products and the engineering team for electric vehicle customization. Major project: locally manufactured Aluminum frame of Electric golf cars for Egyptian International Airport, Terminal 2
9/2012 – 2/2018	Ain Shams University , Cairo, Egypt <i>Manufacturing Engineering Program Unit Head:</i> Update the program curriculums and prepare the program specification and reports to apply for program accreditation. Manage each semester's course offering and instructors selection. Manage program's student affairs.

9/2014 – 9/2017	<p>Ain Shams University, Cairo, Egypt <i>Materials Engineering Program Unit Head:</i> Update the program curriculums and prepare the program specification and reports to apply for program accreditation. Manage each semester’s course offering and instructors selection. Manage program’s student affairs.</p>
8/2010 – Present	<p>Ain Shams University, Cairo, Egypt <i>ASU Racing Team Founder:</i> Supervising the University racing team to join Formula Student competition in UK, Shell Eco Marathon competition in Philippines and Singapore, Autonomous Under-water Vehicle (AUV) in USA, and Remotely Operated Under-water vehicle (ROV) competition. Built two formula student electric cars in collaboration with Sussex University, UK and four Shell Eco-Marathon Urban electric cars.</p>
10/2009 – 9/2019	<p>Ain Shams University, Cairo, Egypt <i>Automotive Engineering Department Postgraduate Academic Adviser:</i> Coach and assist graduate students choose their research point and register courses.</p>
11/2011 – 11/2012	<p>Consumer Protection Agency, Cairo, Egypt <i>Automotive Committee University representative:</i> Technically examine automotive consumer complaints and write technical reports for each case.</p>
9/2011 – 9/2012	<p>Ain Shams University, Cairo, Egypt <i>Automotive Engineering Department Quality Coordinator:</i> Assist department instructors prepare course files and manage department quality requirements as part of Faculty of Engineering accreditation process.</p>
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Experience	<p>Electric Vehicle Rally (EVER), Cairo, Egypt</p>
1/2018 - Present	<p><i>Rally Technical Advisor:</i> Designed the first Egyptian Vehicle Rally that took place at New Administrative Capital in October 2018 and continued in 2019 and at Giza Pyramids in 2020 and at Sharm Elsheikh in 2022 and at Elalamin in 2024. Responsible for selection of electric motors and the suitable battery technologies and their control and management systems. Supervised the rally team to manufacture twenty-eight universities teams to safely run and perform at the final event. Designed and managed the race track at the competition and supervised the final inspection of the electric cars.</p>
5/2025 – Present	<p>Ain Shams University, Cairo, Egypt <i>Automotive Engineering Professor:</i> Teaches Vehicle Control Systems, Simulation of Vehicle Systems, Automotive Engineering, Automatic Control, Brake Systems, Machine Drawing & Solid Modeling, Introduction to Mechatronics, Design of Mechatronics Systems (1 & 2), Introduction to Autotronics, Autotronics, Engine Design, Computer Aided Design, Machine Construction, Mechatronics 2, Pneumatics & Hydraulics Control, Engineering Profession and Engineering Drawing Courses for Undergraduate students. Teaches Hydraulic and Pneumatic System, Vehicle Design 3, Automotive Measurement Systems, Design of Mechatronics Systems, and Mechatronics Systems Modeling & Identification for Postgraduate students. Co-supervise 35 Master students and 9 PhD student in the Automotive and Mechatronics fields.</p>
2/2019 – 5/2025 (Associate Professor)	
5/2008 – 2/2019 (Assistant Professor)	
	<p><i>Automotive Projects Consultant:</i> Test and review multiple local car manufacturers designs and approve by establishing the Ministry of Industry required certificates for commercial vehicles companies.</p>

1/2005 – 7/2012	<p>Caterpillar Inc., Peoria, IL <i>Machine Performance Analyst (4/07 – 7/12)</i>: Supported MWL controls group at IPSS Cat Electronics through running Dynasty simulations for both Tier 4A & 4B machines. Created Virtual Products Development procedures for MWL in Stateflow / Simulink. <i>Research Assistant (1/05 – 3/07)</i>: Developed steer-by-wire force feedback apparatus and control algorithm for earth moving equipments, pending patent, worked on this R&D project through the University of Illinois at Chicago, Mechanical & Industrial Engineering department, Mechatronics Lab as part of PhD thesis research.</p>
1/2005 – 3/2007	<p>University of Illinois at Chicago, Chicago, IL <i>Research Assistant</i>: Assist in Mechatronics Lab electrohydraulic setup installation. Develop control algorithms for different hydraulic actuators through xPC module. <i>Instructor</i>: Teach Automatic Control of Mechanical Systems.</p>
10/2000 – 8/2004	<p>Ain Shams University, Cairo, Egypt <i>Demonstrator</i>: Demonstrated automotive design, automotive engineering, and automotive measurement devices courses. Planned and supervised mini-baja design and manufacturing project, commercial vehicle frame design project, and anti-lock braking system simulator project. <i>Consultant</i>: Tested & Approved 28 passenger minibus and 8.5 tons truck.</p>
8/2000 – 04/2002	<p>Power JAC, Cairo, Egypt <i>Research & Development Engineer</i>: Designed 8.5 tons truck chassis frame. Prepared drawings for manufacturing truck prototype. Tested the truck for performance, safety and durability.</p>
Education	
3/2007	<p><i>University of Illinois at Chicago, Chicago, USA</i> PhD of Mechanical Engineering <i>PhD Thesis Title</i>: Fault Tolerant Steer-By-Wire Electrohydraulic System with Haptic Interface for Articulated Vehicles</p>
5/2003	<p><i>Ain Shams University, Cairo, Egypt</i> Master of Science in Mechanical Engineering <i>Master Thesis Title</i>: The Effect of Cross Members Shape and Location on the Chassis Frame Stresses in Commercial Vehicles</p>
7/2000	<p><i>Ain Shams University, Cairo, Egypt</i> Bachelor of Science in Mechanical Engineering Grade: Distinction with honor degree</p>
Languages	Arabic (native speaker), English (fluent), French (basic).
Publications	https://www.scopus.com/authid/detail.uri?authorId=7003905799 https://scholar.google.com/citations?hl=en&user=UtriWcoAAAAJ
Memberships	Society of Automotive Engineers (SAE).

Publications List

- 1 "Real time fault tolerant electro-hydraulic steer-by-wire control system", M. Abd-Elaziz, S. Haggag, A. Rosa, S. Cetinkunt; In Proceedings of 10th International Conference on Mechatronics Technology. Mexico City, Mexico, 2006
- 2 "Operator model for construction equipment", Elezaby, Ahmed Adel; Abdelaziz, Mohamed; Cetinkunt, Sabri; 2008 IEEE/ASME International Conference on Mechatronics and Embedded Systems and Applications, P:582-585, 2008
- 3 "Development of Automated Manual Transmission Clutch Actuator", M. Abdelhameed, M. Abdelaziz, S. Roshdy; In Proceeding of 12th AEIC Conference, Azhar, Cairo, Egypt, 2012
- 4 "Position Control of Hydraulic Cylinder at Different Patterns of Load", M. Abdelhameed, M. Abdelaziz, S. Maged; In Proceeding of 12th AEIC Conference, Azhar, Cairo, Egypt, 2012
- 5 "Dynamic Performance of a Three-Wheeled Vehicle Steering System, Part 2: Steer-By-Wire and Vehicle Dynamics During Steering", M. Heshmat, M. Abd-Elaziz, M. Rabie, M. Dwidar; 15th ASAT Conference, M.T.C., Cairo, Egypt, 2013
- 6 "Dynamic Performance of a Three-Wheeled Vehicle Steering System, Part 1: Steering System Incorporating Directional Control Valve", M. Heshmat, M. Abd-Elaziz, M. Rabie, M. Dwidar; 15th ASAT Conference, M.T.C., Cairo, Egypt, 2013
- 7 "Modeling and Simulation of Hybrid PV/Thermal Solar System", A. Bayoumi, M. Abdelaziz, M. Abdelhameed; Engineering Research Journal, V. 138, Helwan University, Cairo, Egypt, 2013
- 8 "Design and performance analysis of hybrid fuzzy robust controller for hydraulic system against variable loads", Abdelhameed, Magdy M; Abdelaziz, Mohamed; Maged, Shady A; 2013 8th International Conference on Computer Engineering & Systems (ICCES); P. 158-163, 2013
- 9 "Modeling and simulation of photovoltaic/thermal hybrid system", Bayoumi, A; Abdelaziz, MA; Abdelhameed, Magdy M; 2013 8th International Conference on Computer Engineering & Systems (ICCES); P. 127-132, 2013
- 10 "Design implementation and validation for a hybrid photovoltaic thermal tracking system", Abdelhameed, Magdy M; Abdelaziz, MA; Bayoumi, A; International MiddleEast Power System Conference (MEPCON), 2013
- 11 "ENHANCEMENT OF THE OUTPUT POWER GENERATED FROM A HYBRID SOLAR THERMAL SYSTEM", Abdelhameed, Magdy M; Abdelaziz, MA; Bayoumi, A; International Journal of Research in Engineering and Technology, V.3, 2014
- 12 "Development of integrated brakes and engine traction control system", Abdelhameed, Magdy M; Abdelaziz, Mohamed; ElHady, Nancy E; Hussein, Ahmed M; 15th International Workshop on Research and Education in Mechatronics (REM), 2014
- 13 "THE VELOCITY CONTROL OF THE ELECTRO-HYDRAULIC SERVO SYSTEM", Abdelhameed, Magdy M; Abdelaziz, MA; Bakarman, A; IJERT, V.3, 2014
- 14 "Development and evaluation of a multi-agent autonomous vehicles intersection control system", Abdelhameed, Magdy M; Abdelaziz, Mohamed; Hammad, S; Shehata, Omar M; 2014 International Conference on Engineering and Technology (ICET), 2014
- 15 "A hybrid fuzzy-genetic controller for a multi-agent intersection control system", Abdelhameed, Magdy M; Abdelaziz, Mohamed; Hammad, S; Shehata, Omar M; 2014 international conference on engineering and technology (ICET), 2014
- 16 "Development of a robust hybrid vehicle power management control system", Elsaed, Rabab Yousry; Abdelhameed, Magdy Mohamed; Abdelaziz, Mohamed Ahmed Ibrahim; International Journal Of Engineering Research & Technology (IJERT), V.4, 2015

- 17 "Development of an Auxiliary Engagement System for Earth Moving Equipment Hydromechanical Transmission", Konsowa, M; Metwelly, M; Abdelaziz, M; Elnahas, N; International Conference on Aerospace Sciences and Aviation Technology, V.16, 2015
- 18 "An Analytical Approach to Optimize the Performance of the Bypass for Two-Way Control Valves in Chilled Water Central Air- Conditioning Systems", Elzaabalawy, Hashim; El-Assy, Ahmed; Abdelaziz, Mohamed; CLIMA 2016 - proceedings of the 12th REHVA World Congress, V.9, 2016
- 19 "Neural Network Transmission Control", Barakat, M.; Abdelaziz, M.; SAE 2016 World Congress and Exhibition, 2016
- 20 "Investigation of Passenger Car Impact Absorbers Applying Energy Absorbing Concept.", Ahmed. F. Kotb, Ahmed. M. Hussien, Ibrahim M.Omran, Mohamed A. Abdelaziz; The International Journal of Enhanced Research in Science, Technology, and Engineering, V.5 P. 149-156, 2016
- 21 "Design and Performance Analysis of PID Controller for Position Control of Hydraulic Systems actuated by Servo Motor Drives", Mohamed A. Elshaarawy, Farid A. Tolbah, Magdy M. Abdelhameed, Mohamed AbdelAziz; The International Journal of Enhanced Research in Science, Technology & Engineering, V.5, P. 220 – 228, 2016
- 22 "Performance Evaluation of the Brakes and Engine Traction Control Systems on Various Roads", Magdy M. Abdelhameed, Mohamed A. Abdelaziz, Nancy E. ElHady, and Ahmed M. Hussein; Proceedings of 4th. Commercial Vehicle Technology Symposium, P. 97 – 108, 2016
- 23 "Metaheuristic optimization in path planning of autonomous vehicles under the ATOM framework", Magdy, Youmna; Shehata, Omar M.; AbdelAziz, Mohamed; Ghoneima, Maged; Tolbah, Farid; 2017 IEEE International Conference on Vehicular Electronics and Safety (ICVES), 2017
- 24 "X-by-Wire ROS-enabled System Development based on ATOM Framework", Radwan, A.; Shehata, O. M.; Abdelaziz, M.; Tolbah, F.; EAEC 2017 - 15th European Automotive Congress, 2017
- 25 "A Computational Study on the Moment Coefficient C_m of Formula One Exposed Dry and Wet-Condition Wheels", Soliman, Mohamed Zakaria; Elnahas, Nabila S; Abdelaziz, Mohamed A; El-Baz, Ahmed R; OMICS International: Fluid Mechanics, V.4, 2017
- 26 "Investigation of a digital valve system efficiency for metering-in speed control using MATLAB/Simulink", Elsaed, Essam; Abdelaziz, Mohamed; Mahmoud, Nabil A; International conference on hydraulics and pneumatics-23rd edition (HERVEX), P. 120-129, 2017
- 27 "Modular Estimation Strategy of Vehicle Dynamic Parameters for Motion Control Applications", Rawash, Mustafa; Abdelaziz, Mohamed; Ghoneima, Maged; Tolbah, Farid; MATEC Web of Conferences, V. 166, 2018
- 28 "Design of High-Lift Airfoil for Formula Student Race Car", Mahgoub, A.; El-Zaabalawy, H.; Aboelsoud, W.; and Abdelaziz, M.; SAE International Journal of Commercial Vehicles, V.12, 2018
- 29 "A 14 DEGREES OF FREEDOM VEHICLE DYNAMICS MODEL TO PREDICT THE BEHAVIOR OF A GOLF CAR", Ibrahim, MS; Abdelaziz, M; Elmarhoomy, A; Ghoniema, M; The International Conference on Applied Mechanics and Mechanical Engineering, Military Technical College, V.18, 2018
- 30 "A MODIFIED SAMPLING METHOD FOR LOCALIZATION ACCURACY IMPROVEMENT OF MONTE CARLO LOCALIZATION", Awad-Allah, MA; Abdelaziz, MA; Shahin, MA; Tolbah, FA; The International Conference on Applied Mechanics and Mechanical Engineering, Military

Technical College, V.18, 2018

- 31 "Advanced Mapping and Localization for Autonomous Vehicles using OSM", Ismail, Mustafa; Tarek, Ahmed; Plaza, Pablo Marin; Gomez, David Martin; Armingol, José María; Abdelaziz, Mohamed; 2019 IEEE International Conference on Vehicular Electronics and Safety (ICVES), 2019
- 32 "Using a Neural Network to Minimize Pressure Spikes for Binary-coded Digital Flow Control Units", Elsaed, Essam; Abdelaziz, Mohamed; Mahmoud, Nabil A; International Journal of Fluid Power, P. 323-352, 2019
- 33 "Developing a Track Simulation Tool for Formula Student Race Cars Using Python", Khedr, Sherif; Elzaabalawy, Hashim; Abdelaziz, Mohamed; SAE Technical Paper, 2019
- 34 "Implementation of vector control on electric vehicle traction system", Ibrahim, Nady; Abdelaziz, Mohamed; Ghoneima, Maged; Hammad, Sherif; Bulletin of the National Research Centre, V.44, 2020
- 35 "TRACTION CONTROL OF VEHICLES USING SUPER TWISTING SLIDING MODE CONTROLLER AND A NOVEL TIRE FORCE ESTIMATION STRATEGY", Shafiq, Sara; Abdelaziz, Mohamed; Ghonima, Maged; Tolba, Farid; Journal of Al-Azhar University Engineering Sector, V.15, P. 112-125, 2020
- 36 "A nonlinear model predictive controller for autonomous driving", Dawood, Murad; Abdelaziz, Mohamed; Ghoneima, M; Hammad, S; 2020 International Conference on Innovative Trends in Communication and Computer Engineering (ITCE), P. 151-157, 2020
- 37 "Development of automated manual transmission system using fuzzy logic control", Roshdy, S; Abdelaziz, M; International Journal of Mechatronics and Automation, V.7, P. 43-55, 2020
- 38 "A path-tracking algorithm using predictive Stanley lateral controller", AbdElmoniem, Ahmed; Osama, Ahmed; Abdelaziz, Mohamed; Maged, Shady A; International Journal of Advanced Robotic Systems, V.17, 2020
- 39 "Modular Design of X-by-wire Systems to Facilitate Autonomous Platform Development", Hafez, Hady; Maged, Shady A; Abdelaziz, Mohamed; 2020 8th International Conference on Control, Mechatronics and Automation (ICCA), P. 42-46, 2020
- 40 "Platform Modifications Towards an Autonomous Multi-Passenger Golf Cart", Hafez, Hady; Maged, Shady A; Osama, Ahmed; Abdelaziz, Mohamed; 2020 2nd Novel Intelligent and Leading Emerging Sciences Conference (NILES), P. 525-531, 2020
- 41 "A two-stage approach for passive sound source localization based on the SRP-PHAT algorithm", Awad-Alla, MA; Hamdy, Ahmed; Tolbah, Farid A; Shahin, Moatasem A; Abdelaziz, MA; APSIPA Transactions on Signal and Information Processing, V.9, 2020
- 42 "Numerical investigation of the effect of tread pattern on rotating wheel aerodynamics", Soliman, MZ, El-Baz, AR, Abdel-Aziz, MA, Abdel-Aziz, N and Sugar-Gabor, O; International Journal of Automotive and Mechanical Engineering, V.17, 2021
- 43 "Adaptive Pure-Pursuit Controller Based on Particle Swarm Optimization (PSO-Pure-Pursuit)", AbdElmoniem, Ahmed; Afif, Youssef T; Maged, Shady A; Abdelaziz, Mohamed; Hammad, Sherif; 2021 16th International Conference on Computer Engineering and Systems (ICES), 2021
- 44 "Path Planning Algorithm for Dynamic Obstacles Based on Support Vector Machines Towards Autonomous Navigation", Nossier, Ehab; Ibrahim, Fady; Abdelwahab, M; AbdelAziz, M; 2021 16th International Conference on Computer Engineering and Systems (ICES), 2021
- 45 "Multi-Obstacle Avoidance Algorithm for Autonomous Vehicles", Nossier, Ehab; Ibrahim, Fady; Abdelwahab, M; AbdelAziz, M; 2021 16th International Conference on Computer

- Engineering and Systems (ICCES), 2021
- 46 "Decoupled 3-D object detector", Arafa, Moemen; Osama, Ahmed; Abdelaziz, M; Ghoneima, Maged; García, Fernando; Maged, Shady A; International Journal of Vehicle Autonomous Systems, V.16, P. 143-160, 2022
 - 47 "Effects of independent wheels steering system on vehicle cornering performance and road safety of the smart cities", Elhofy, Mostafa; Abdelaziz, M; Omran, I; Abdelwahab, M; Ain Shams Engineering Journal, V.14, 2023
 - 48 "Fuzzy predictive Stanley lateral controller with adaptive prediction horizon", Abdelmoniem, Ahmed; Ali, Abdullah; Taher, Youssef; Abdelaziz, Mohamed; Maged, Shady A; Measurement and Control, V.56, P. 1510-1522, 2023
 - 49 "Autonomous Driving Peripheral And Central Vision Region Selection For Semantic Segmentation", Abdelkader, Ahmed; Abdelwahab, Mohamed; Ibrahim, Fady; Abdelaziz, Mohamed; 2023 9th International Conference on Mechatronics and Robotics Engineering (ICMRE), P. 118-122, 2023
 - 50 "Trajectory planning approach for autonomous electric bus in dynamic environment", Waleed, Ahmed; Hammad, Sherif; Abdelaziz, Mohamed; Maged, Shady A; Proceedings of the Institution of Mechanical Engineers, Part D: Journal of Automobile Engineering, V.238, P. 4255-4270, 2024
 - 51 "Wastegate control strategy in electrically assisted turbochargers: A formula student car case study", Shoman, Mohamed; Aboelsoud, Walid; Eldein Hussin, Ahmed Mohamed Taher Alaa; Abdelaziz, Mohamed; International Journal of Engine Research, V.26, P. 135-146, 2025
 - 52 "The Temperature Effect on Electric Vehicle's Lithium-Ion Battery Aging Using Machine Learning Algorithm", zearban, Mohamed; Abdelaziz, Mohamed; Abdelwahab, Mohamed; Engineering Proceedings, Multidisciplinary Digital Publishing Institute (MDPI), V.70, 2024
 - 53 "Structural performance evaluation of electric vehicle chassis under static and dynamic loads", Zamzam, Omar; Ramzy, Aly A; Abdelaziz, Mohamed; Elnady, Tamer; El-Wahab, Ayman A Abd; Scientific Reports, Nature Publishing Group UK London, V.15, 2025
 - 54 "Robust Velocity Control for a Launch Vehicle Erection System", Saber, A.K., Maged, S.A., Abdelaziz, M., Mohamed, M.S.: Journal of Robotics and Control JrcOpen source preview, 2025, 6(4), pp. 1693–1709