Publications

Journals Articles

[J1]   Bahareh Etaati, Mehdi Neshat, Amin Abdollahi Dehkordi, Navid Salami Pargoo, **Mohammed El-Abd**, Ali Sadollah and Amir H. Gandomi. "Shape and Sizing Optimisation of Space Truss Structures Using a New Cooperative Coevolutionary-based Algorithm". Results in Engineering, vol. 21, Elsevier, 101859, 2024.

[J2]   Ali Kelkawi, Imtiaz Ahmad, and **Mohammed El-Abd**. "Spark-based Cooperative Coevolution for Large Scale Global Optimization". Cluster Computing, vol 27, Springer, pp. 1911-1926, 2024.

[J3]   Diego Oliva, Noé Ortega-Sanchez, Mario A. Navarro, Alfonso Ramos-Michel, **Mohammed El-Abd**, Seyed Jalaleddin Mousavirad, and Mohammad H. Nadimi-Shahraki. "Segmentation of thermographies from electronic systems by using the global-best brain storm optimization algorithm". Multimedia Tools and Applications, vol. 82, issue 29, Springer, pp. 44911-44941, 2023.

[J4]   Ali Kelkawi, **Mohammed El-Abd**, and Imtiaz Ahmad. "GPU-based Cooperative Coevolution for Large Scale Global Optimization". Neural Computing and Applications, Springer, vol. 35, Springer, pp. 4621-4642, 2023.

[J5]   Iyad Abu Doush, **Mohammed El-Abd**, Abdelaziz Hammouri, and Mohammad Qasem Bataineh. "The effect of different stopping criteria on multi-objective optimization algorithms". Neural Computing and Applications, vol. 35, issue 2, Springer, pp. 1125-1155, 2023.

[J6]   Iyad Abu Doush, Mohammed Azmi Al-Betar, Mohammed A. Awadalla, Zaid Abdi Alkareem Alyasseri, Sharif Naser Makhadmeh, and **Mohammed El-Abd**. "Island Neighboring Heuristics Harmony Search Algorithm for Flow Shop Scheduling with Blocking". Swarm and Evolutionary Computation, Elsevier, vol. 74, 101127, 2022.

[J7]   Bahareh Etaati, Amin Abdollahi Dehkordi, Ali Sadollah, **Mohammed El-Abd**, and Mehdi Neshat. "A Comparative State-of-the-art Constrained Meta-heuristics framework for Truss Optimisation on Shape and Sizing". Mathematical Problems in Engineering, Article ID 6078986, Hindawi, 2022.

[J8]   Palwasha W. Shaikh, **Mohammed El-Abd**, Mounib Khanafer, and Kaizhou Gao. "A Review on Swarm Intelligence and Evolutionary Algorithms for Solving the Traffic Signal Control Problem". IEEE Transactions on Intelligent Transportation Systems, vol. 23, issue 1, pp. 48-63, 2022.

[J9]   Rehab Ali Ibrahim, Mohamed Abd Elaziz, Ahmed A. Ewees, **Mohammed El-Abd**, and Songfeng Lu. "New Feature Selection Paradigm Based on Hyper-heuristic Technique". Applied Mathematical Modelling, Elsevier, vol. 98, pp. 14-37, 2021.

[J10] Issam Damaj, **Mohammed El-Abd**, Ashley Ater-Kranov, Jennifer DeBoer. "Guest Editorial Special Issue on Project-Based, Senior Design, and Capstone Courses in Engineering Education". IEEE Transactions on Education, vol. 63, no. 2, pp. 79-81, 2020.

[J11] Ahmed Hassanein, **Mohammed El-Abd**, Issam Damaj, and Haseeb Ur Rehman. "Parallel Hardware for Random Grouping Brain Storm Optimization Algorithms using FPGAs". Microprocessors and Microsystems, vol. 74, 103005, Elsevier, 2020.

[J12] Issam Damaj, Mohammed El-Shafei, **Mohammed El-Abd**, and Mehmet Emin Aydin. "An Analysis Framework for High-Speed Hardware Particle Swarm Optimization". Microprocessors and Microsystems, vol. 72, 102949, Elsevier, 2020.

[J13] **Mohammed El-Abd**. "Global-best Brain Storm Optimization Algorithm". In Swarm and Evolutionary Computation, Elsevier, vol. 37, pp. 27-44, 2017.

[J14] **Mohammed El-Abd**. "Preparation of Engineering Students for Capstone Design Experience through a Microprocessors Course". In the International Journal of Engineering Pedagogy (iJEP), vol. 7, no. 4, pp. 91-101, 2017.

[J15] **Mohammed El-Abd**. "A Review of Embedded Systems Education in the Arduino Age: Lessons Learned and Future Directions". In the International Journal of Engineering Pedagogy (iJEP), vol. 7, no. 2, pp. 79-93, 2017.

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[J17] **Mohammed El-Abd**. "On the Hybridization of the Artificial Bee Colony and Particle Swarm Optimization Algorithms". Journal of Artificial Intelligence and Soft Computing Research, vol. 2, no. 2, pp. 147-155, 2012.

[J18] **Mohammed El-Abd**. "Performance Assessment of Foraging Algorithms vs. Evolutionary Algorithms". Information Sciences, Elsevier, vol. 182, issue 1, pp. 243-263, 2012.

[J19] **Mohammed El-Abd** and Mohamed Kamel. "A Heterogeneous Cooperative Particle Swarm Optimizer with Migrated Probability Models". Swarm Intelligence, Springer, vol. 4, no. 1, pp. 57-89, 2010.

[J20] **Mohammed El-Abd**, Hassan Hassan, Mohab Anis, Mohamed Kamel and Mohamed El-Masry. "Discrete Cooperative Particle Swarm Optimization for FPGA Placement". Applied Soft Computing, Elsevier, vol. 10, no. 1, pp. 284-295, 2010.

[J21] **Mohammed El-Abd** and Mohamed Kamel. "A Taxonomy for Cooperative Particle Swarm Optimizers". The International Journal on Computational Intelligence Research (IJCIR), *special issue on PSO*, vol. 4, issue 2, pp. 137-144, 2008.

[J22] **Mohammed El-Abd**, Sherif Hammad, Mostafa Gomaa, and Abdel Moneim Wahdan. "Robot Motion Planning: A Methodology for Collision-Free Path Generation". Scientific Bulletin of the Faculty of Engineering in Ain Shams University, vol. 38, no. 2, pp. 585-598, 2003.

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[TR1] Kaizhou Gao and **Mohammed El-Abd**. "Competition on Urban Traffic Signal Control Problems". AUK Technical Report, 2022.
https://dspace.auk.edu.kw/handle/11675/8718

Book Chapters

[B1] Marwa Sharawi, Mohammadreza Gholami, and **Mohammed El-Abd**. "Brain Storm Optimization Algorithm". In the Handbook of AI-based Metaheuristics, 1st edition, CRC Press, Taylor and Francis, 2021.

[B2] Seham Elsayed, **Mohammed El-Abd**, and Karam Sallam. "Enhancing the Local Search Ability of the Brain Storm Optimization Algorithm by Covariance Matrix Adaptation". In Brain Storm Optimization Algorithms: Concepts, Principles and Applications, pp. 105 – 122, 2020.

[B3] **Mohammed El-Abd** and Mohamed Kamel. "PSO_Bounds: A New Hybridization Technique of PSO and EDAs". Foundations of Computational Intelligence, vol. 3, Abraham, Ajith; Hassanien, Aboul Ella; Siarry, Patrick; Engelbrecht, Andries (Eds), Studies in Computational Intelligence (SCI) Series, vol. 203, pp. 509-526, 2009.

[B4] **Mohammed El-Abd** and Mohamed Kamel. "Cooperative Particle Swarms Optimizers: A Powerful and Promising Approach". In Springer-Verlag Studies in Computational Intelligence (SCI) Series, vol 34, Abraham, Ajith; Grosan, Crina; Ramos, Vitorino (Eds.), Stigmergic Optimization, pp. 239-260, 2006.

Conference Papers

[C1] Mohamed Abdel-Basset, Hossam Hawash, Marwa Sharawi, **Mohammed El-Abd**, Karam Sallam, and Mohamed Abouhawwash. "Quantum Intelligence in Beyond 5G Networks: Current Progress, and Open Avenues". Accepted for publication in the IEEE Conference on Artificial Intelligence (CAI), 2024.

[C2] Seyed Jalaleddin Mousavirad, Diego Oliva, Gerald Schaefer, Mahshid Helali Moghadam and **Mohammed El-Abd**. "A Novel Two-Level Clustering-Based Differential Evolution Algorithm for Training Neural Networks". In the International Conference on the Applications of Evolutionary Computation (EvoAPPS), pp. 259-272, 2024.

[C3] Ayman K Kandil, Ali A Darwiche, Reem A Qasem, Fatima Mohammad Matook, Ahmad Bassam Younis, Habib A Badran, Maryam A Bin-Jassem, Ossama M Ahmed, Ali Behiry, **Mohammed El-Abd**, and Mounib M Khanafer. "'Pipeline Leak Identification Emergency Robot Swarm (PLIERS)". In the 20th Annual IEEE International Conference on Sensing, Communication, and Networking (SECON), 2023.

[C4] Sahar Rahmani, Seyed Jalaleddin Mousavirad, Mohammed El-Abd, Gerald Schaefer, Diego Oliva. "Centroid-Based Differential Evolution with Composite Trial Vector Generation Strategies for Neural Network Training". In the International Conference on the Applications of Evolutionary Computation (EvoApplications), pp. 608-622, 2023.

[C5] Nada Nabeeh, Mai Gaafar, Ahmed Abdelmonem, Mohamed Abdel-Basset, Karam Sallam, **Mohammed El-Abd**, and Ali Mohamed. "A Neutrosophic Evaluation Model for Blockchain Technology in Supply Chain Management". In the IEEE International Conference on Fuzzy Systems (FUZZ-IEEE), pp. 1-8, 2022.

[C6] Nada Nabeeh, Ahmed Abdelmonem, Mai Gaafar, Karam Sallam, Mohamed Abdel-Basset, **Mohammed El-Abd**, and Ali Mohamed. "A Comparative Analysis for Hybrid Methodology using Neutrosophic theory with MCDM for Manufacture Selection". In the IEEE International Conference on Fuzzy Systems (FUZZ-IEEE), pp. 1-8, 2022.

[C7] Karam Sallam, Mohamed Abdel-Basset, **Mohammed El-Abd**, and Ali Mohamed. "IMODEII: an Improved IMODE algorithm based on the Reinforcement Learning". In the IEEE Congress on Evolutionary Computation (CEC), pp. 1-8, 2022.

[C8] Iyad Abu Doush, Mohammed Azmi Al-Betar, Mohammed A. Awadallah, Abdelaziz I. Hammouri, and **Mohammed El-Abd**. "Island-based Modified Harmony Search Algorithm with Neighboring Heuristics Methods for Flow Shop Scheduling with Blocking". In the IEEE Symposium Series on Computational Intelligence (SSCI), pp. 976-982, 2020.

[C9] Miao Zheng, Yushikazu Fukuyama, **Mohammed El-Abd**, Tatsuya Iizaka, and Tetsuro Matsui. "Overall Optimization of Smart City by Multi-population Global-best Brain Storm Optimization using Cooperative Coevolution". In the IEEE Congress on Evolutionary Computation (CEC), pp. 1-7, 2020.

[C10] Mounib Khanafer and **Mohammed El-Abd**. "Stimulating Research Projects Through Teaching a Course on the Internet of Things". In the IEEE Global Engineering Education Conference (EDUCON), pp. 1758-1763, 2020.

[C11] **Mohammed El-Abd**, Kunjie Yu, and Shelei Ge. "Parameters Identification of Photovoltaic Cell and Module using LSHADE". In the 12th International Conference on Advanced Computational Intelligence, pp. 189-193, 2020.

[C12] Mohamed Abd Elaziz, Songfeng Lu, Diego Oliva, and **Mohammed El-Abd**. "Improved Moth-Flame Optimization Based on Opposition-Based Learning for Feature Selection". In the IEEE Symposium Series on Computational Intelligence (SSCI), pp. 3017-3024, 2019.

[C13] Junfeng Chen, Yuhao Wang, Xingsi Xue, Shi Cheng and **Mohammed El-Abd**. "Cooperative Co-evolutionary Metaheuristics for Solving Large-Scale TSP Art Project". In the IEEE Symposium Series on Computational Intelligence (SSCI), pp. 2706-2713, 2019.

[C14] Mayuko Sato, Yushikazu Fukuyama, **Mohammed El-Abd**, Tatsuya Iizaka, and Tetsuro Matsui. "Total Optimization of Energy Networks in Smart City by Cooperative Coevolution using Global-best Brain Storm Optimization". In the IEEE Congress on Evolutionary Computation (CEC), pp. 681-688, 2019.

[C15] Hanan Hiba, **Mohammed El-Abd**, and Shahryar Rahnamayan. "Improving SHADE with Center-based Mutation for Large-scale Optimization". In the IEEE Congress on Evolutionary Computation (CEC), pp. 1533-1540, 2019.

[C16] **Mohammed El-Abd**. "Gaussian Bare-Bones Brain Storm Optimization Algorithm". In the IEEE Congress on Evolutionary Computation (CEC), pp. 227-233, 2019.

[C17] Mounib Khanafer and **Mohammed El-Abd**. "Guidelines for Teaching an Introductory Course on the Internet of Things". In the IEEE Global Engineering Education Conference (EDUCON), pp. 1488-1492, 2019.

[C18] Iyad Abu Doush, Mohammad Qasem Bataineh, and **Mohammed El-Abd**. "On Different Stopping Criteria for Multi-Objective Harmony Search Algorithms". In the 3rd International Conference on Intelligent Systems, Metaheuristics & Swarm Intelligence (ISMSI), pp. 30-34, 2019.

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[C20] Marwa Sharawi and **Mohammed El-Abd**. "A Cooperative Co-evolutionary LSHADE Algorithm for Large-Scale Global Optimization". In the IEEE Symposium Series on Computational Intelligence (SSCI), pp. 777-784, 2017.

[C21] Iyad Abu Doush, Mohammad Qasem Bataineh, and **Mohammed El-Abd**. "The Hybrid Framework for Multi-objective Evolutionary Optimization Based On Harmony Search Algorithm". In: Mizera-Pietraszko J., Pichappan P., Mohamed L. (eds) Lecture Notes in Real-Time Intelligent Systems. RTIS 2017. Advances in Intelligent Systems and Computing, Springer, vol 756, pp. 134-142, 2017.

[C22] **Mohammed El-Abd**. "Cooperative Co-evolution using The Brain Storm Optimization Algorithm". In the IEEE Symposium Series on Computational Intelligence (SSCI), pp. 1-7, 2016.

[C23] **Mohammed El-Abd**. "Cooperative Co-evolution using LSHADE with Restarts For The CEC15 Benchmarks". In the IEEE Congress on Evolutionary Computation (CEC), pp. 4810–4814, 2016. **(Ranked #2 in the CEC16 Competition – CEC15 Benchmarks)**.

[C24] **Mohammed El-Abd**. "Brain Storm Optimization Algorithm with Re-initialized Ideas and Adaptive Step Size". In the IEEE Congress on Evolutionary Computation (CEC), pp. 2682–2686, 2016.

[C25] **Mohammed El-Abd**. "How Course Projects can Successfully Prepare Engineering Students for Capstone Design Projects". In the IEEE Global Engineering Education Conference (EDUCON), pp. 746-750, 2016.

[C26] **Mohammed El-Abd**. "Hybrid Cooperative Co-evolution For The CEC15 Benchmarks". In the IEEE Congress on Evolutionary Computation (CEC), pp. 1053-1058, 2015.

[C27] Jibran Yousafzai, Issam Damaj, and **Mohammed El-Abd**. "A Unified Approach for Assessing Capstone Design Outcomes in Computer Engineering Programs". In the IEEE Global Engineering Education Conference (EDUCON), pp. 340-346, 2015. **(Best Paper Award – Area 5: Learning in Transition and Engineering Education Ecosystems)**.

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[C29] **Mohammed El-Abd**. "Local-best Artificial Bee Colony Algorithm with Dynamic Sub-Populations". In the IEEE Congress on Evolutionary Computation (CEC), pp. 522-528, 2013.

[C30] **Mohammed El-Abd**. "Testing A Particle Swarm Optimization and Artificial Bee Colony Hybrid Algorithm on The CEC13 Benchmarks". In the IEEE Congress on Evolutionary Computation (CEC), pp. 2215-2220, 2013.

[C31] Safaa Zaman, Fakhri Karray, and **Mohammed El-Abd**. "Feature Selection Approaches for Intrusion Detection Systems based on Evolution Algorithms". In the 7th International Conference on Ubiquitous Information Management and Communication. Article No. 10, 2013.

[C32] **Mohammed El-Abd** and Mohamed Kamel. "Particle Swarm Optimization with Adaptive Bounds". In the IEEE Congress on Evolutionary Computation (CEC), pp. 225-230, 2012.

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[C36] **Mohammed El-Abd**. "Black-Box Optimization Benchmarking for Noiseless Function Testbed using Artificial Bee Colony". In the Black Box Optimization Benchmarking (BBOB) workshop, Genetic and Evolutionary Computation Conference (GECCO), 1719-1724, 2010.

[C37] **Mohammed El-Abd**. "A Cooperative Approach to the Artificial Bee Colony Algorithm". In the IEEE Congress on Evolutionary Computation (CEC), pp. 1-5, 2010.

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Benchmarking (BBOB) workshop, Genetic and Evolutionary Computation Conference (GECCO), pp. 2275-2280, 2009.

[C41] **Mohammed El-Abd**. "Preventing Premature Convergence in a PSO and EDA Hybrid". Proceedings of the IEEE Congress on Evolutionary Computation (CEC), pp. 3060-3066, 2009.

[C42] **Mohammed El-Abd**, Hassan Hassan and Mohamed Kamel. "Discrete and Continuous Particle Swarm Optimization for FPGA Placement". Proceedings of the IEEE Congress on Evolutionary Computation (CEC), pp. 706-711, 2009.

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[C45] **Mohammed El-Abd** and Mohamed Kamel. "A Hierarchal Cooperative Particle Swarm Optimizer". Proceedings of the IEEE Symposium Series on Computational Intelligence (SSCI), pp. 43-47, Indianapolis, May 2006.

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[C50] **Mohammed El-Abd** and Mohamed Kamel. "Multiple Cooperating Swarms for Non-Linear Function Optimization". Proceedings of the IEEE 4th International Workshop on Soft Computing as Transdisciplinary Science and Technology WSTST 05, 2nd workshop on Swarm Intelligence and Patterns SIP05, pp. 999-1008, Japan, May 2005.

Capstone Supervision Publications - Conference Papers

[CP1] Batool Hassan, Yara Al-Qurashy, Shahed Al-Moussa, Youssef Al-Sahaf, and **Mohammed El-Abd**. "V-Lab: The Virtual Electric Machines Laboratory". In the IEEE Global Engineering Education Conference (EDUCON), pp. 72-77, 2020.

[CP2] Mennatallah Ibrahim, Mark Riad, and **Mohammed El-Abd**. "RoadEye – The Intelligent Transportation System". In the 14th ACS/IEEE International Conference on Computer Systems and Applications, AICCSA, pp. 21-22, 2017. **(Best Poster Award)**.

[CP3] Ahmed Bitar, Aliaa Jamal, Hesham Sultan, Nour Alkandari, and **Mohammed El-Abd**. "Medical Drones System for Amusement Parks". In the 14th ACS/IEEE International Conference on Computer Systems and Applications, AICCSA, pp. 19-20, 2017.

[CP4] Abeer Imdoukh, Ahmed Shaker, Aya Al-Toukhy, Darin Kablaoui, and **Mohammed El-Abd**. "Semi-Autonomous Indoor Firefighting UAV". In the 18th International Conference on Advanced Robotics, ICAR, pp. 310-315, 2017.

[CP5] Fatemah Taqi, Fatima Al-Langawi, Heba Abdulraheem, and **Mohammed El-Abd**. "A Cherry-Tomato Harvesting Robot". In the 18th International Conference on Advanced Robotics, ICAR, pp. 463-468, 2017.

[CP6] Amr Lotfy, Ahmed Abdul-Basset, Omar Abbas, and **Mohammed El-Abd**. "Ambient Intelligence in Automated Houses". In the 9th IEEE GCC Conference and Exhibition, pp. 1107-1022, 2017.

[CP7] Muhammad Haq, Adnan Merish, and **Mohammed El-Abd**. "A Smart City Model Implementation". In the IEEE Canadian Conference on Electrical and Computer Engineering, CCECE, pp. 599-604, 2016.

[CP8] Asraa Al-Wazzan, Farah Al-Ali, Rawan Al-Farhan, and **Mohammed El-Abd**. "Tour-Guide Robot". In the Second IEEE International Conference on Industrial Informatics and Computer Systems, CIICS, pp. 1-5, 2016.

[CP9] Ahmed Mandy, Hassan Qazweeni, Mohammed Noureddine, Talal Al-Radhwan, and **Mohammed El-Abd**. "Pet Smart House". In the Second IEEE International Conference on Industrial Informatics and Computer Systems, CIICS, pp. 1-5, 2016.

[CP10] Nasser Al-Ostath, Zainab Al-Roudhan, Fatma Selityn, and **Mohammed El-Abd**. "Implementation of an Emergency Vehicle to Traffic Lights Communication System". In the 7th International Conference on New Technologies, Mobility, and Security, NTMS, pp. 1-5, 2015.

[CP11] Ahmed Hassanein, Mohanad Elhawary, Nour Jaber, and **Mohammed El-Abd**. "An Autonomous Firefighting Robot". In the 17th International Conference on Advanced Robotics, ICAR, pp. 530-535, 2015.

[CP12] Amira Mahmoud, Khloud Bibway, Salma Chiko, and **Mohammed El-Abd**. "Robo-Waiter". In the Industrial Academia Collaboration Conference, IAC, 2015.

[CP13] Bashayer Al-Beeshi, Bashayer Al-Mesbah, Sara Al-Dosari, and **Mohammed El-Abd**. "iPlant: The Greenhouse Robot". In the IEEE Canadian Conference on Electrical and Computer Engineering, CCECE, pp. 1489 – 1494, 2015.

[CP14] Manal Al-Sharrah, Manar Al-Bader, Duha Ismail, and **Mohammed El-Abd**. "Cooperative Garbage Collecting Robots". In the 8th IEEE GCC Conference and Exhibition, pp. 1-6, 2015.

[CP15] Khaled Al-Ajmi and **Mohammed El-Abd**. "Implementing a Population-based Harmony Search Algorithm on Graphic Processing Units". In the IEEE Canadian Conference on Electrical and Computer Engineering, CCECE, pp. 471-475, 2014.

[CP16] Dana Al-Matter, Maryam Al-Omar, Jarrah Jarrah, and **Mohammed El-Abd**. "Be Safe Smart System". In the IEEE Canadian Conference on Electrical and Computer Engineering, CCECE, pp. 506-511, 2014.

Capstone Supervision Publications - Abstracts/Short Papers

[A1] Naser Mahdi, Mohammad Omar, Ahmed AboElhiba, Dana Alnobani, Abeer Imdoukh, and **Mohammed El-Abd**. "SkyPhoenix: The Anti-Drone Defense System". In the 14th Undergraduate Research Conference (URC), 2024.

[A2] Catherine El-Neaman, Danah Al-Hazza, Malak Ahmed, Haya Al-Korki, **Mohammed El-Abd**, and Sayed Esmaeili. "Smart Helmet: Towards Enhancing Workers Safety". In the 14th Undergraduate Research Conference (URC), p. 99, 2022. **(Best Poster Award)**.

[A3] Maryam Al-Foudari, Abrar Alqallaf, Sarah Alharbi, Mohammed Almotawa, and **Mohammed El-Abd**. "Mirino: The Swimming Robot". In the 10th Undergraduate Research Conference (URC), p. 89, 2018.

[A4] Faisal A. Al-Baghli, Anfal K. Al Failakawi, and **Mohammed El-Abd**. "Hotel Smart Mirror". In the 9th Undergraduate Research Conference on Applied Computing, URC, p. 5, 2017.

[A5] Aya Al-Toukhy, Abeer Imdoukh, Ahmed Shaker, Darin Kablaoui, and **Mohammed El-Abd**. "Auxilio: A Fire-Fighting Drone". In the 9th Undergraduate Research Conference on Applied Computing, URC, p. 108, 2017.

[A6] Ahmed Bitar, Aliaa Jamal, Hesham Sultan, Nour Alkandari, and **Mohammed El-Abd**. "Medical Drones System for Amusement Parks". In the 9th Undergraduate Research Conference on Applied Computing, URC, p. 30, 2017.

[A7] Mark Riad, Mennatallah Ibrahim, and **Mohammed El-Abd**. "RoadEye: Intelligent Transportation System". In the 9th Undergraduate Research Conference on Applied Computing, URC, p. 29, 2017.

[A8] Anwar Esmaeel, Sawsan Al-Otaibi, and **Mohammed El-Abd**. "Student Tracking System (STS) for Elementary School". In the 9th Undergraduate Research Conference on Applied Computing, URC, p. 51, 2017. **(Best Poster Presentation Award)**.

[A9] Heba Abdulraheem, Fatima Al-Langawy, and Fatma Taqi, and **Mohammed El-Abd**. "The Harvesting Robot". In the 9th Undergraduate Research Conference on Applied Computing, URC, p. 66, 2017.

[A10] Maali Al-Ansari, and **Mohammed El-Abd**. "Smart WheelChair for Disabled Children". In the 9th Undergraduate Research Conference on Applied Computing, URC, p. 40, 2017.

[A11] Fajer Al-Shammari, Maali Al-Ansari, and **Mohammed El-Abd**. "Smart Wheel Chair". In the Women In Engineering Track in the 9th IEEE GCC Conference and Exhibition, pp. 385-386, 2017.

[A12] Asraa Al-Wazzan, Farah Al-Ali, Rawan Al-Farhan, and **Mohammed El-Abd**. "A Museum Tour Guide Robot". In the 8th Undergraduate Research Conference on Applied Computing, URC, p. 86, 2016.

[A13] Aliaa Ashkanani, Doaa Murad, Eiman Mohammed, and **Mohammed El-Abd**. "An Intelligent Road System for Smart Cities". In the 8th Undergraduate Research Conference on Applied Computing, URC, p. 38, 2016.

[A14] Ahmed Hassanein, Mohanad Elhawary, Nour Jaber, and **Mohammed El-Abd**. "FireBot the Autonomous Firefighting Robot". In the 7th Undergraduate Research Conference on Applied Computing, URC, p. 129, 2015.

[A15] Muhammad Haq, Adnan Merish, and **Mohammed El-Abd**. "Project Leap (A Smart City)". In the 7th Undergraduate Research Conference on Applied Computing, URC, p. 28, 2015.

[A16] Hajer Al-Nothary, Taibah Al-Kandary, Hesah Al-Jenfawi, and **Mohammed El-Abd**. "Mine-Sweeper Robot". In the 7th Undergraduate Research Conference on Applied Computing, URC, p. 32, 2015.

[A17] Bashayer Al-Beeshi, Bashayer Al-Mesbah, Sara Al-Dosari, and **Mohammed El-Abd**. "iPlant: The Intelligent Farming System". In the 7th Undergraduate Research Conference on Applied Computing, URC, p. 95, 2015. **(Best Poster Presentation Award)**.

[A18] Amira Mahmoud, Khloud Bibway, Salma Chiko, and **Mohammed El-Abd**. "A Robotic Restaurant Waiter". In the 7th Undergraduate Research Conference on Applied Computing, URC, p. 43, 2015.

[A19] Khaled Al-Ajmi and **Mohammed El-Abd**. "Implementing the Artificial Bee Colony Algorithm on Graphic Processing Units". In the 6th Annual Undergraduate Research Conference on Applied Computing, URC, p. 52, 2014.