

## Amir R. Ali, Ph.D.

Lecturer

ARAtronics Group Director and the Principle Investigator  
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## Personal Data:

Date of Birth: December 20, 1985

Nationality: Egyptian.

## Education:

2011 – 2015 **Doctor of Philosophy [Ph.D]: Dielectric Micro-Resonator-Based Opto-Mechanical Systems for Sensing Applications, GPA: 3.962**

Department of Mechanical and Mechatronics Engineering, School of Engineering and Applied Science, Southern Methodist University, Dallas, Texas, 75275, USA.

2008 - 2010 **Master of Science [M.Sc.]: Mechatronics Systems and Control [Flexible Robots Manipulators] , GPA: 4.00**

Department of Mechatronics, Faculty of Engineering and Material Science, The German University in Cairo, Egypt.

2002 - 2007 **Bachelor of Science [B.Sc.]: Mechatronics Systems and Control [Smart Systems] , GPA: 3.88**

Department of Mechatronics, Faculty of Engineering, October 6 university, Egypt.

## Employment:

2015 - Present **Assistant Professor**

Department of Mechatronics, Faculty of Engineering and Material Science, The German University in Cairo, Cairo, Egypt.

2015 - Present **Assistant Professor**

Department of Mechatronics, Faculty of Engineering and Material Science, The GUC Berlin Campus, Berlin, Germany.

2015 - Present **Visitor Research Assistant Professor**

Micro-Sensor Laboratory, Department of Mechanical Engineering, School of Engineering and Applied Science, Southern Methodist University, Dallas, Texas, 75275, USA.

Summer 2014-  
Present **Visitor scholar and Researcher**

National Wind Resource Center, Department of Mechanical Engineering, Texas Tech University, Lubbock, Texas, USA.

2011 – 2015 **Teaching and Research Assistant**

Department of Mechanical Engineering, School of Engineering and Applied Science, Southern Methodist University, Dallas, Texas, 75275, USA.

2008 - 2011 **Teaching and Research Assistant**

Department of Mechatronics, Faculty of Engineering and Material Science, The German University in Cairo, Egypt.

September 2010	<b>Robotics Trainer and Developer</b> Department of Mechatronics, Roboclub, Faculty of Engineering and Material Science, <u>The German University in Cairo</u> , Egypt.
2007 - 2008	<b>Teaching Assistant</b> Department of Mechatronics, Faculty of Engineering, <u>October 6 University</u> , Egypt.
2007 - 2008	<b>Research Assistant</b> Department of Aerospace, Faculty of Engineering, <u>Cairo University</u> , Egypt.
2005 - 2008	<b>Associate Member in the “Mechatronics Application Groups”, MAGs</b> Department of Mechatronics, Faculty of Engineering and Surveying, <u>University of Southern Queensland</u> , Australia.

## Editorship and Professional Societies Activities:

2018-Present	Appointed as Editorial Board Member towards the Open Access Journal of Complementary & Alternative Medicine (OAJCAM). <a href="https://www.lupinepublishers.com/oajcam/editorial-committee.php#">https://www.lupinepublishers.com/oajcam/editorial-committee.php#</a>
2018-Present	Appointed as Reviewer at the SPIE Journal (Optical Engineering)
2017-2019	Appointed as one of the Editorial Board of American Journal of Optics and Photonics
November 2018	Committee member for the Third International Conference on Solar Energy Solutions for Electricity and Water Supply in Rural Areas, Conference scheduled for November 7 <sup>th</sup> -10 <sup>th</sup> this year at AUC.
2017-Present	Reviewer at the Journal of Modern Environmental Science and Engineering
2017-Present	Reviewer for the MERIT Research Journal of Environmental Science and toxicology
2017-Present	Reviewer for the Journal American Institute of Physics (AIP), Renewable and Sustainable Energy (JRSE)
2017-Present	Reviewer for the Optics Communications – Journal – Elsevier
2017-Present	Reviewer for the International Journal For light & Electron Optics (OPTIK) – Journal – Elsevier
October 2017	Committee member in the Int'l Conference on Industrial and Mechanical Engineering (CIME 2017) to be held from October 20 to 22, 2017, in Guilin China, is one of the special tracks within the World Congress on Engineering and Technology (CET 2017).
March 2017	Committee member for the 9 <sup>th</sup> International Conference for Basic Sciences, March 27 <sup>th</sup> -29 <sup>th</sup> , Cairo, Egypt
2016-Present	Reviewer for the Transactions of the Institute of Measurement and Control
2016-Present	Reviewer for Optics Express
October 2016	Committee member for the Second International Conference on Solar Energy Solutions for Electricity and Water Supply in Rural Areas, Conference scheduled for October 12-15 this year at AUC.
2017-Present	Reviewer for OSA (Optical Society of America)
2015-Present	Reviewer for Optics Letter
2015-Present	Reviewer for Applied Optics
2015-Present	Reviewer for Journal American Institute of Physics (AIP), AIP Scitation.
Dec. 12,2015- Dec. 15,2015	Reviewer and committee member in the 2015 International Conference on fuzzy System and Data Mining. (Shanghai)
July 26,2015- July 27,2015	Member of Electrical, Automation and Mechanical Engineering (EAME2015) and reviewer as one of the Technical Program Committee members of the conference. (Phuket, Thailand) <a href="http://www.eame2015.org/com.htm">http://www.eame2015.org/com.htm</a>

2015-Present	Guest Editor in Sensors & Transducers Journal <a href="http://www.sensorsportal.com/HTML/DIGEST/Call_for_Articles_Micro_Optical_Sensors.htm">http://www.sensorsportal.com/HTML/DIGEST/Call_for_Articles_Micro_Optical_Sensors.htm</a>
2014-Present	Member, American Society of Mechanical Engineers (ASME).
2013-Present	Member in a good standing of PE (National Society of Professional Engineers).
2013-Present	Member, Texas Society of Professional Engineers (TSPE).
2013- Present	Member, Electron Devices Society (IEEE-EDS).
2013- Present	Member, Society of Photo-optical Instrumentation Engineers (SPIE).
2013- Present	Member, Communications Society, (IEEE-COMSOC)
2013- Present	Member, American Institute of Aeronautics and Astronautics, (AIAA).
2013- Present	Member, US-INDIA Chamber of Commerce-Dallas/FT. worth- (USICOC).
2012- Present	Member, Robotics and Automation Society, (RAS).
2011 - Present	Member of IEEE (the world's largest professional association for the advancement of technology).
2010 - Present	Member of Bdaya (start) club at the German University in Cairo GUC. Which is Involving with activities in civic, public and international affairs (NGOs, volunteer work, etc).
2009 - Present	Founder and Chair of Robotics Club (RoboClub) at the German University in Cairo GUC.
2008 - 2011	Member of the advising committee at the German University in Cairo GUC.
2007 - 2008	Associated member in making and organizing seminars at October 6 university.
2005 - 2008	Associate Member in the Mechatronics Application Groups, (MAGs), Department of Mechatronics, Faculty of Engineering and Surveying, University of Southern Queensland, Australia.

## Honors and Awards:

- Receiving appreciation award from the Journal of Optical Engineering for the volunteer working as a reviewer. The journal appreciate the contribution of Prof. Amir's time and efforts **2019**.
- Receiving the National Instruments Award (NIDays) for 2017 in the Academic & Research Track, Sept. 15<sup>th</sup>, Biuret, Lebanon, **2017**.
- Notable alumni award from the Southern Methodist University, Fall **2017**.
- Receiving the National Instruments Award (NIDays) for 2016 in the Academic & Research Track, Mar. 3rd, Egypt, Cairo, **2016**.
- Dedication Award of the Egyptian Engineers Syndicate for my research and publications through my PhD in Engineering Sciences in **2015**.
- Award of entrepreneurship from the US-INDIA Chamber of Commerce (USICOC) spirit of innovation-Dallas Fort Worth, December, **2014**.
- First prize for the best presentation award at Research Improve sponsored by the Lyle School of Engineering, Southern Methodist University, Dallas, Texas, November, **2013**.
- First place for SMU's Graduate Student Research Award, which is open to all graduate students at Southern Methodist University, Research Day, Dallas, Texas, February, **2013**.
- The Outstanding Graduate Student Award in M.Sc. Mechatronics Engineering (with Grade A+), 2009-2010, Faculty of Engineering and Material Science (EMS), the German University in Cairo, Egypt.
- Distinction Award, Graduation with Honors, July, Cairo, Egypt, **2007**.
- Egyptian Government Award for Excellence in Undergraduate Studies, **2002-2007**. Five years in a row.

## Certificates:

- Certificate of Texas Society of Professional Engineers (TSPE) **2013**.
- Certificate in Auto CAD (2D & 3D), Rendering and Photoshop, with an (Excellent grade) **2007**.
- Certificate in programming Microcontroller and Embedded systems using (ASM-Language) and its interfaces **2006**.
- Certificate in programming Microcontroller and Embedded systems using (C-Language) and its interfaces **2006**.
- Certificate in Interfacing with Microcontrollers **2006**.
- Certificate from Siemens Energy and Automation, Inc in programming PLCs **2004**.

## Teaching Experience:

- **Courses Taught at the German University in Cairo (2015-Present):**

Below is the course I have teaches as a Professor. In this course I was responsible for tutoring students, preparing new tutorials. In this course, I was responsible for preparing course slides and lectures in addition to evaluate students.

*Sensor Technology, Modern Control Engineering, Mechatronics Programming for Real-Time Systems, Strength of Materials I*

*Supervising more than 107 Bachelors thesis, 11 Master Students and 1 PhD student in the period between 2015-present*

- **Courses Taught at the Southern Methodist University (2011-2018):** Thermodynamics.

Technical Supervision of Students Research in Micro-sensor laboratory:

- Sam Tamaso (Bachelor degree, graduated in 2016, Texas A&M University).
- Josh Davis (Bachelor degree, graduated in 2013, Southern Methodist University).
- Isai Ake (Bachelor degree, graduated in 2014, Rice University).
- Benjamin Wise (Bachelor degree, graduated in 2017, Southern Methodist University).
- Kingslea K. Stringham (Bachelor degree, graduated in 2017, Texas Tech University).
- Danny Le (Bachelor degree, graduated in 2016, Southern Methodist University).
- Drake Frank (Bachelor degree, graduated in 2015, Southern Methodist University).
- Andrew Gatherer (Bachelor degree, graduated in 2017, Rice University).
- Kinyata Cooper (Bachelor degree, graduated in 2017, Howard University).

- **Courses Taught at Southern Methodist University (2011-2015):**

Below is the course I have TA'ed. In this course I was responsible for tutoring students, preparing new tutorials. In this course, I was responsible for preparing course slides, tutoring lectures and labs in addition to evaluate students.

*Thermodynamics.*

*Micro-Optical Sensors.*

*Vibration control and Robotics.*

- **Courses Taught at the German University in Cairo (2008-2011):**

Below a list of all courses I have TA'ed. In all these courses I was responsible for tutoring students, preparing new tutorials, prepare and mark mid-term exams. In these courses, I was responsible for preparing course slides, tutoring lectures and labs in addition to evaluate students.

*Robotics, Vibration of Structures, Mechatronics System Design, Microcontrollers Design, Advanced Mechatronics Systems, Control Engineering, Strength of Materials I, Strength of Materials II, Mechanics I.*

- **Co-advisor for bachelor theses at the German University in Cairo (2008-2011):**

- B.Sc. Thesis title: “Self-Balancing Electric Unicycel Using a Contactless Digital Tachometer”, **2011.**

Student name: Ramy Alaa.

Advisors: Prof. Imam Morgan, Head of Mechatronics Department and Vice dean for academic affairs, and **Amir R. Ali.**

- B.Sc. Thesis title: “Modeling and Simulation of a SCARA Robot Using Solid Work and LabView Verification”, **2010.**

Student name: Norhan Ryhan.

Advisors: Prof. Imam Morgan, Head of Mechatronics Department and Vice dean for academic affairs, and **Amir R. Ali.**

- B.Sc. Thesis title: “Software PID Control of an Inverted Pendulum Using PIC16F684”, **2010.**

Student name: Yehia Said.

Advisors: Prof. Ibrahim Mansour, Dean of Engineering and Material Science (EMS), and **Amir R. Ali.**

- **Courses Taught at October 6 University (2007-2008):** Design and Control of Robotics, Smart Machine Design, Modeling and Simulations of Dynamic Systems, Real-Time Systems, Introduction to CAD, Computer Interfacing Laboratory.
- **Co-advisor for the Asia-Pacific Robot Contest (ABU Robocon 2008) at October 6 University.**  
The ABU Robocon 2008 was held at Maharashtra Institute of Technology (MIT), Pune, India on 31 August 2008, where 17 Engineering Colleges from 16 countries participated. In the competition robots compete to complete a task within a set period of time.

## Research Interests:

- Opto-mechanical systems for sensing applications.
- Opto-mechatronics systems design and analysis.
- Micro-optical sensors technology.
- Biomedical Instrumentation and Robotics.
- Experimental, analytical and computational mechanics.
- Perturbation Methods and nonlinear dynamics.
- Linear and nonlinear control of dynamics systems.
- Biomedical Sensing devices.
- Locomotion and Vibration Control.
- Haptic Interfaces.
- Composite control strategies
- Robotics and flexible manipulators.
- Brain computer interface.
- Neuroscience and electrophysiology.
- Lab on a Chip.
- Industrial Automation.

## Research Experience:

- Founder, Group Director and the Principle Investigator of the Applied-Science and Robotics Laboratory for Applied-Mechatronics (ARATronics Lab.) at GUC.
- Developed an optical data processing of whispering gallery modes in real-time for sensing applications, The German University in Cairo, Egypt.
- Enhancement layering technique for electric field detection using optical cavity based on finite element analysis, The German University in Cairo, Egypt.
- Developed trajectory tracking control for optical tweezers for in the drug delivery applications, The German University in Cairo, Egypt.
- Established and Developed the Opto-Mechanical Laboratory, in the National Wind Resource Center, Department of Mechanical Engineering at Texas Tech University, Lubbock, TX, USA.
- Developed a Micro-phonic sensor to measure the pressure inside human nerves using optical resonators, in the health sciences center, school of allied health sciences, at Texas Tech University, Lubbock, TX, USA.
- Developed a dynamic model for the new athlete helmet design to reduce head and neck injuries in football, in the health sciences center, school of allied health sciences, at Texas Tech University, Lubbock, TX, USA.
- Developing micro-optical mechanical sensing technology based on the whispering gallery mode (WGM) optical resonators, in the department of mechanical engineering, school of engineering and applied science, Southern Methodist University, Dallas, Texas, 75275, USA.

- Developing novel optical measurement techniques using optical resonators such as rings, disks or spheres, with sizes ranging from several microns to several hundreds of microns, in the department of mechanical engineering, school of engineering and applied science, Southern Methodist University, Dallas, Texas, 75275, USA.
- Exploring potential applications in mechanical sensing, in the department of mechanical engineering, school of engineering and applied science, Southern Methodist University, Dallas, Texas, 75275, USA.
- Demonstrating the feasibility of micro-optical sensors for temperature, force, pressure, wall shear stress as well as electric and magnetic fields. This photonic sensor concept can be extended to a system of distributed sensors providing spatial data resolved in time and space, in the department of mechanical engineering, school of engineering and applied science, Southern Methodist University, Dallas, Texas, 75275, USA.
- Theoretical analysis and experimental implementation of nonlinear modeling and control for flexible-link manipulator based on a singular perturbation approach. Using two different hardware architectures, namely data-acquisition card with a personal computer (DAQ system) and programmable automation controller (PAC) which uses field-programmable gate array technology.
- Developed the Mechatronics Laboratory, the Microcontroller Laboratory, and the LabVIEW laboratory, in the department of mechatronics, faculty of engineering and material science, The German University in Cairo, Egypt.
- Developed a Pumping Station Control using SCADA (supervisory control and data acquisition) system, in the department of mechatronics, faculty of engineering and material science, The German University in Cairo, Egypt.
- Developed a Solar tracking control system, in the department of mechatronics, faculty of engineering and material science, The German University in Cairo, Egypt.
- Developed a Smart Water Irrigation system for Greenhouses, in the department of mechatronics, Faculty of Engineering, October 6 University, Egypt.

## Industrial Experience:

- YES PAC, Cairo, Egypt.  
(**October 2017**, Engineering Consultancy).  
Design of tools and dies for molding, forming, and stamping, specialty cutting tools, and special devices for handling fitting machine-tools,
- Bahgat Group. Printed Circuit Board, Cairo, Egypt.  
(**August 2006**, Undergrad Internship)  
My roles varied from developing single sided, double sided and flexible boards. High quality PCBs designs for any number of layers using high-end CAD tools.
- Egyptian Drilling Company (EDC-MAERSK), Cairo, Egypt.  
(**August. 2005**, Undergrad Internship)  
In this period, I was assigned to different projects. Developing embedded software and monitors the operations of rig equipment using the state of the art Oracle systems along with other early checks.
- Hanz Elevators, Cairo, Egypt.  
(**July 2004**, Undergrad Internship)  
Developing a communication interface using PLC.

## Organizing Workshops:

- I organized a workshop with Prof. Alois Herkommer at Technische Optik (ITO), Universität Stuttgart, Stuttgart, Germany to come to my ARAtronics lab to give a lecture and talk about the 3D printing optical sensors. Feb. 10<sup>th</sup> 2019 (A workshop with <100 participants)
- I organized a workshop with Prof. Alois Herkommer at Technische Optik (ITO), Universität Stuttgart, Stuttgart, Germany. The outcome of this workshop that Prof. Herkommer accept to supervise one of my Bachelor students for his BSc. Thesis during the next semester Spring 2019. Also, we Both Prof. Herkommer and I started to apply for grants together entitled with “Novel concepts for fiber-optical sensors based on printed micro-optical components,,. Oct. 12th 2018 (A workshop with <100 participants)
- I organized a workshop for the Engineering and Pharmacy Students to illustrate the Bio sensing optical devices and to let all students from different fields working in a multidisciplinary research topic. May 4th 2018 (A workshop with <100 participants)
- I organized a workshop with Prof. Manuel Delgado from University of Seville (SPAIN) to start a collaboration for the brain computer interface using micro-optical sensors. Jan. 29th 2018(A workshop with <100 participants)
- Workshop between GUC ARAtronics and Fraunhofer IPM under supervision of Dr. Amir and Prof. Frank Kühnemann. Aug. 15th 2017
- I organized a Workshop with National Instruments (NI) to teach the GUC ARAtronics students the new DAQ device called MyRIO in the ARAtronics lab. Apr. 3rd 2017 (A workshop with <100 participants)
- I co-organized and participate in a workshop; DWZ Egyptian German Water Cluster: TechTalk Water: Desalination organized by the DAAD Oct. 11th 2016 (A workshop with <100 participants)
- I co-organized a workshop with TU Berlin El Gouna and DAAD on the side of the first International Conference on Solar Energy Solutions for Electricity and Water Supply in Rural Areas, 7th -10th October, 2015 (A workshop with <100 participants)
- I co-organized a workshop with TU Berlin El Gouna and DAAD on the side of the second International Conference on Solar Energy Solutions for Electricity and Water Supply in Rural Areas, 12th -15th October, 2016 (A workshop with <100 participants)
- I co-organized a workshop with TU Berlin El Gouna and DAAD on the side of the third International Conference on Solar Energy Solutions for Electricity and Water Supply in Rural Areas, 7th -10th November, 2018 (A workshop with <100 participants)

## Publications:

### a. Books

1. Engy A. Kassem and **Amir R. Ali** “PID Controller, Fabrication And Simulation For The XYZ Gantry Robot”, Lambert, ISBN: 978-613-9-99567-7, Düsseldorf, Germany, (2019)
2. Khaled El-Agha, **Amir R. Ali**, Imam Morgan “Smart Optical Sensors for Mechatronics and Robotics Systems: Analytical and Experimental Implementation”, Lambert, ISBN: 978-613-9-95194-9, Düsseldorf, Germany, (2018)
3. Yasmin M. Massoud and **Amir R. Ali** “WGM Optical Sensors For Mechatronics Applications: Biomedical and Industrial Automation”, Lambert, ISBN: 978-613-9-91982-6, Düsseldorf, Germany, (2018)
4. Mohamed A. Kamel and **Amir R. Ali** “Electric Field Detection Using Whispering-Gallery Modes Cavities: Mathematical Models and Simulation”, Lambert, ISBN: 978-3-659-82944-4, Düsseldorf, Germany, (2018)

5. Abdelkarim Saleh and **Amir R. Ali** "Magnetic Field Whispering-Gallery Modes Sensors for Biomedical Tech.: Development trends and Applications", Lambert, ISBN: 978-613-9-83852-3, Düsseldorf, Germany, **(2018)**
6. **Amir R. Ali** "Principles of Sensing Based on Micro-optical Whispering Gallery Modes: Physics, Design, and Applications", Lambert, ISBN: 978-620-2-07891-7, Düsseldorf, Germany, **(2017)**

## **b. Selected Articles (Journals and Conferences):**

1. **Amir R. Ali**, Haidi H. Badawi, and Momen Algohary, "Acoustic sensor based on fiber-optic polymeric resonator," J. Opt. Soc. Am. B 36, 509-516 **(2019)**
2. **Amir R. Ali** "Micro-optical vibrometer/accelerometer using dielectric microspheres", **Accepted**, Opt. Express 27(4), **(2019)**.
3. **Amir R. Ali**, Maram Wael, Reem A. Assal "Design and Deployment of a Low-Cost Water Quality Monitoring Sensor Using Micro-Optical Resonator", Third International Conference on Solar Energy Solutions for Electricity and Water Supply in Rural Areas, November 7th -10th at the AUC, Cairo, Egypt **(2018)**.
4. **Amir R. Ali**, Amal S. Tourky, Roushdy A. Ali "Novel Optical Flocculation Approach for Chemical Contaminations in the Water Treatment Using Micro/Nano Polymeric Beads", Scientific Pages Photonics Opt 1(1):7-15, **(2018)**
5. **Amir R. Ali**, Mohamed A. Kamel "Novel design of electrical sensing interface for prosthetic limbs using optical micro cavities", AIP Conference Proceedings 1956, 020002 **(2018)**
6. **Amir R. Ali**, Haidi H. Badawi "Opto-mechanical frequency analyzer using polymeric optical resonators", SPIE Photonics Europe, April 22nd -26th, Strasbourg, France, **(2018)**.
7. **Amir R. Ali**, Ahmad M. Monier "Fabrication techniques for micro-optical hollow resonator used in high-bandwidth sensing applications", SPIE Photonics Europe, April 22nd -26th, Strasbourg, France, **(2018)**.
8. **Amir R. Ali**, Mohamed A. Kamel, Momen Algohary "Angular orientation effects on electric field optical sensor", SPIE Photonics Europe, April 22nd -26th, Strasbourg, France, **(2018)**.
9. **Amir R. Ali**, Abdelkarim Saleh "High-resolution magnetic field biosensor based on optical resonators", SPIE Photonics Europe, April 22nd -26th, Strasbourg, France, **(2018)**.
10. **Amir R. Ali**, Amal S. Tourky, Roushdy A. Ali "Optical flocculation technique based on optogenetic and whispering gallery modes for drinking water purification", SPIE Photonics Europe, April 22nd -26th, Strasbourg, France, **(2018)**.
11. **Amir R. Ali**, Amal S. Tourky, Roushdy A. Ali "Effect of Dangling Bonds on De-Poling Time for Polymeric Electric Field Optical Sensors", Chemosensors, 6(1), 3 **(2018)**.
12. **Amir R. Ali**, Abdelkarim Hamdy, Imam Morgan "Novel techniques for high resolution magnetic field detection using WGM based sensor", 6<sup>th</sup> international conference on biotechnology and bioengineering, Offenburg, Germany, **(2017)**.
13. **Amir R. Ali**, Mohamed A. Kamel "Novel design of electrical sensing interface for prosthetic limbs using optical micro cavities", 6<sup>th</sup> international conference on biotechnology and bioengineering, Offenburg, Germany, **(2017)**.
14. **Amir R. Ali**, Mohamed A. Kamel "Mathematical Model for Electric Field Sensor Based on Whispering Gallery Modes Using Navier's Equation for Linear Elasticity", *Journal of Mathematical Problems in Engineering*, Vol. 17, **(2017)**.



15. **Amir R. Ali**, Catherein M. Elias “Ultra-Sensitive Optical Resonator for Organic Solvents Detection Based on Whispering Gallery Modes”, *Chemosensors*, 5, 19, (2017).
16. **Amir R. Ali**, “Development of Whispering Gallery Mode Polymeric Micro-optical Sensors to Detect Chemical Impurities in Water Environment”, *Scientific Pages Photonics Opt* 1(1):7-15, (2017)
17. **Amir R. Ali**, Catherein Noshay “Direct measurement for organic solvents diffusion using ultra-sensitive optical resonator”, *SPIE Micro Technologies*, May 8<sup>th</sup> -10<sup>th</sup>, Barcelona, Spain, (2017).
18. **Amir R. Ali**, Amr N. Afifi, Hazem Taha, “Optical data processing and tracking of whispering gallery modes in real-time for sensing applications”, *SPIE Micro Technologies*, May 8<sup>th</sup> -10<sup>th</sup>, Barcelona, Spain, (2017).
19. **Amir R. Ali** “Micro-resonator-based electric field sensors with long duration of sensitivity”, *SPIE Micro Technologies*, May 8<sup>th</sup> -10<sup>th</sup>, Barcelona, Spain, (2017).
20. **Amir R. Ali**, Abanoub M. Erian, Kirelloss Shokry “Computational model and simulation for the whispering gallery modes inside micro-optical cavity” *SPIE Micro Technologies*, May 8<sup>th</sup> -10<sup>th</sup>, Barcelona, Spain, (2017).
21. **Amir R. Ali**, Yasmin M. Massouda “Bio-optical sensor for brain activity measurement based on whispering gallery modes” *SPIE Micro Technologies*, May 8<sup>th</sup> -10<sup>th</sup>, Barcelona, Spain, (2017).
22. **Amir R. Ali**, Mohamed Ashraf, “Novel Techniques for optical sensors using single core multi-layer structures for electric filed detection”, *SPIE Optics & Optoelectronics*, April 24<sup>th</sup> -27<sup>th</sup>, Prague, Czech Republic, (2017).
23. **Amir R. Ali**, Amal S. Tourky, “Sustainable solution for water monitoring and treatment using ultra-sensitive photonic sensors”, *The 9<sup>th</sup> International Conference for Basic Sciences*, March 27<sup>th</sup>-29<sup>th</sup>, Cairo, Egypt, (2017).
24. **Amir R. Ali**, Andrew Gatherer, Mariam S. Ibrahim, “Spinning optical resonator sensor for torsional vibrational applications measurements”, *SPIE LASE International Society for Optics and Photonics*, February (2016).
25. **Amir R. Ali**, Ahmed Abozead, “Effect of microbial layers on wall shear stress measurements for drinking water supply via photonic sensor”, *Second International Conference on Solar Energy Solutions for Electricity and Water Supply in Rural Areas*, October 12<sup>th</sup> -15<sup>th</sup> at the AUC, (2016).
26. **Amir R. Ali**, “A novel approach for water treatment based on the opto-genetic technique”, *Second International Conference on Solar Energy Solutions for Electricity and Water Supply in Rural Areas*, October 12<sup>th</sup> -15<sup>th</sup> at the AUC, (2016).
27. **Amir R. Ali**, Hazem Taha, and Amr Afifi “Real Time data tracking for concentrations measurement of drinking water constituents”, *Second International Conference on Solar Energy Solutions for Electricity and Water Supply in Rural Areas*, October 12<sup>th</sup> -15<sup>th</sup> at the AUC, (2016).
28. **Amir R. Ali**, “Dielectric micro-resonator-based opto-mechanical systems for sensing applications”, Ph.D. Dissertations (Order No. 3702180). Available from ProQuest Dissertations & Theses Global. (1682477785), (2015).
29. **Amir R. Ali**, Volkan Ötügen, Tindaro Ioppolo, “High data rate transient sensing using dielectric micro-resonator”, *Applied opt.*, 54, 7076-7081 (2015).
30. **Amir R. Ali**, “Chemical impurities detection in water environment using micro-optical sensors”, *International Conference on Solar Energy Solutions for Electricity and Water Supply in Rural Areas*, October 7<sup>th</sup> -10<sup>th</sup> at the AUC, (2015).
31. **Amir R. Ali**, M. V. Ötügen, T. Ioppolo “High-speed transient sensing using dielectric micro-resonators”, *SPIE LASE International Society for Optics and Photonics*, (2015).

32. **Amir R. Ali**, M. V. Ötügen, T. Ioppolo, “High-speed transient sensing using dielectric micro-resonators”, Poster session *SPIE LASE* International Society for Optics and Photonics, San Francisco, CA, USA (2015).
33. **Amir R. Ali**, M. V. Ötügen, T. Ioppolo “Dielectric micro-resonator-based opto-mechanical systems for a wide bandwidth sensing applications”, Poster session for Southern Methodist University graduate research, Dallas, TX, USA. February, (2015).
34. **Amir R. Ali**, Tindaro Ioppolo, “Effect of angular velocity on sensors based on morphology dependent resonances”, *Sensors*, (2014), 14, 7041-7048.
35. **Amir R. Ali**, Tindaro Ioppolo, Volkan Ötügen, Marc Christensen, Duncan MacFarlane “Photonic electric field sensor based on polymeric microspheres”, *J. Polym. Sci. B Polym. Phys*, 52,276-279, (2014).
36. **Amir R. Ali** and M. V. Ötügen “Measurement of wall shear stress in a planar backward-facing step flow using a micro-optical sensor”, Texas fluid dynamics meeting, April 11<sup>th</sup>-13<sup>th</sup> (2014).
37. **Amir R. Ali**, M. V. Ötügen, T. Ioppolo, “High-bandwidth sensing using WGM optical sensors”, Poster session for Bobby B. Lyle school of Engineering, Research day, Southern Methodist University graduate research, Dallas, TX, USA. November, (2014).
38. **Amir R. Ali** and M. V. Ötügen, “A novel micro-photonic electric field sensor for brain-machine interface”, Poster session for Southern Methodist University graduate research, Dallas, TX, USA. February, (2014).
39. **Amir R. Ali** and M. V. Ötügen “A novel micro-photonic wall shear stress sensor”, Texas fluid dynamics meeting, May 3<sup>rd</sup>-5<sup>th</sup> (2013).
40. **Amir R. Ali**, T. Ioppolo, M. V. Ötügen “Beam-coupled microsphere resonators for high-resolution electric field sensing”, *SPIE LASE* International Society for Optics and Photonics, (2013).
41. **Amir R. Ali** and M. V. Ötügen, “A new interface uses light to provide communication between mind and artificial limb”, Electronic poster session at Southern Methodist University, research improve day, Dallas, TX, USA, November, (2013).
42. **Amir R. Ali**, Josh Davis, M. V. Ötügen “Beam-coupled microsphere sensor development for brain-prosthetic limb interface”, Poster session for Southern Methodist University graduate research, Dallas, TX, USA. February, (2013).
43. **Amir R. Ali**, T. Ioppolo, M. V. Ötügen “High-resolution electric field sensor based on whispering gallery modes of a beam-coupled dielectric resonator”, *Engineering and Technology (ICET), International Conference on IEEE*, (2012).
44. Tarek Khalil, **Amir Roushdy**, Mohamed Adel, Amr Montasser, “Experimental performance investigation of a solar thermal driven absorption LiBr Chiller in Cairo under the Egyptian solar conditions”, the 4<sup>th</sup> International Conference on Solar Air-Conditioning, Larnaka, Cyprus, 12-14 October (2011).
45. Ayman A. El-Badawy and **Amir R. Ali**, “Experimental model-reference composite control of lightweight flexible manipulators”, the 8<sup>th</sup> International Conference on Structural Dynamics, *EURODYN 2011*, Leuven, Belgium, 4-6 July (2011).
46. Ayman A. El-Badawy, Mohamed W. Mehrez, and **Amir R. Ali**, “Nonlinear modeling and control of flexible-link manipulators subjected to parametric excitation”, *Nonlinear dynamics*, 62.4 , pp.769-779, (2010).

### c. Other Selected Talks:

1. **Amir R. Ali** “*Whispering Gallery Modes Resonators as Bio-sensors for Medical Applications*”, Invited lecture in the Institut für Technische Optik (ITO), Universität Stuttgart, Stuttgart, Germany, (2018).

2. **Amir R. Ali** “Polymeric Optical Resonators for Brain Tracking System Based on Whispering Gallery Modes”, Invited lecture in the Institut für Materialprüfung, Werkstoffkunde und Festigkeitslehre (IMWF), Universität Stuttgart, Stuttgart, Germany, (2018).
3. **Amir R. Ali** “Mind-controlled prosthetics”, TEDxGUC Talk, Sept. 24th, Cairo, Egypt, (2018).
4. **Amir R. Ali** “Micro-Photonic sensors based on whispering gallery mode resonators: From theory to Application”, NI Days in Academic & Research Track, Sept. 15<sup>th</sup>, Biuret, Lebanon, (2017).
5. **Amir R. Ali** “Micro-optical Sensing Technology Based on Whispering Gallery Modes: From Theory to Application”, The 9<sup>th</sup> International Conference for Basic Sciences, March 27<sup>th</sup>-29<sup>th</sup>, Cairo, Egypt, (2017).
6. **Amir R. Ali** “Communication between Prosthetic Limbs and Peripheral Nerves of the Brain”, at National Instrument (NI) Academic Day, Cairo, Egypt, March 5<sup>th</sup>, (2016).
7. **Amir R. Ali** “Photonic sensors using light to bridge the communication gap between man and machine”, at Texas Instruments (TI), organized by the US-INDIA Chamber of Commerce (USICOC) spirit of innovation-Dallas Fort Worth, Texas, USA, (2014).
8. **Amir R. Ali** “Dielectric micro-resonator-based opto-mechanical systems for sensing applications”, Lab exposition session in the research day at Southern Methodist University, Dallas, Texas, USA, (2014).
9. **Amir R. Ali** “Effect of pressure on neurodynamic techniques based on micro-optical sensors”, Texas Tech University, Lubbock, Texas, USA, (2014).
10. **Amir R. Ali** “A novel micro-optical sensor based on whispering gallery mode resonators”, Lab exposition session in the research day at Southern Methodist University, Dallas, Texas, USA, (2013).
11. **Amir R. Ali** “A tip tracking for flexible link manipulator using singular perturbation approach”, Katholieke University Leuven, Leuven, Belgium, (2011).
12. **Amir R. Ali** “Use of inverse dynamics for trajectory tracking of flexible-link manipulator”, Technical University Munich, Munich, Germany, (2010).
13. **Amir R. Ali** “Smart water irrigation system for greenhouses”, October 6 University, Cairo, Egypt, (2007).

#### **d. Supervision on Master (7 MSc) & Bachelor (107 BSc) Thesis Degree (Published Thesis):**

1. **Amir R. Ali**, Haidi Haytham “Opto-mechanical frequency analyzer based on whispering gallery modes” M.Sc. thesis, German University in Cairo, Feb. (2019)
2. **Amir R. Ali**, Khalid Al Agha, “Modeling, Design and Implementation for locomotion robot mechanism using optical and inertial actuation approach” M.Sc. thesis, German University in Cairo, Jan. (2019)
3. **Amir R. Ali**, Abadir Hany Bahgat Reyad, “EMG Signals Filtering and Pattern Recognition”, B.Sc. thesis, German University in Cairo, spring (2019)
4. **Amir R. Ali**, Mostafa Mahmoud Ahmed Abdelkader Zahran, “Control a dry powder inhaler formulation delivery using an optical readout signals”, B.Sc. thesis, German University in Cairo, spring (2019)
5. **Amir R. Ali**, Said Hassan Said Ali Mohamed Soudan, “Trajectory tracking control of the dry powder inhaler formulation delivery based on optical sensors”, B.Sc. thesis, German University in Cairo, spring (2019)

6. **Amir R. Ali** , Mostafa Abdelmotelb Lotfy Abdelmotelb Abdelmgeed, “*Pressure measurements using optical bio-photonic probe for medical robots applications*”, B.Sc. thesis, German University in Cairo, spring (2019)
7. **Amir R. Ali** , Sherif Muhammad, “*Flexible optical sensors used in robotics feedback applications*”, B.Sc. thesis, German University in Cairo, spring (2019)
8. **Amir R. Ali** , Abdelhameed Mubarak, “*EMG Controlled Smart Prosthetic Arm*”, B.Sc. thesis, German University in Cairo, spring (2019)
9. **Amir R. Ali** , Ramy Mahmoud, “*Control Design and Simulation for a smart inhaler to help asthma sufferers breathe easier*”, B.Sc. thesis, German University in Cairo, spring (2019)
10. **Amir R. Ali** , Moustafa Mahmoud, “*Design and control one leg of the quadruped robot*”, B.Sc. thesis, German University in Cairo, spring (2019)
11. **Amir R. Ali** , Mohamed Hady, “*Angular velocity measurements using on optical cavity for humanoid robots* ”, B.Sc. thesis, German University in Cairo, spring (2019)
12. **Amir R. Ali** , Omar Hesham Metwally, “*Design and control of a low-cost cancer cells (Cytometer) monitoring sensor using micro-optical resonator*”, B.Sc. thesis, German University in Cairo, spring (2019)
13. **Amir R. Ali** , Abdelrahman Mageed, “*Micro-optical sensors for medical applications*”, B.Sc. thesis, German University in Cairo, spring (2019)
14. **Amir R. Ali** , Hussien Hatem, “*Development of industrial automation in manufacturing for production lines*”, B.Sc. thesis, German University in Cairo, spring (2019)
15. **Amir R. Ali** , Yasmine Medhat, “*New technique for inertial sensing using optical resonators in robotics*”, B.Sc. thesis, German University in Cairo, spring (2019)
16. **Amir R. Ali** , Abdelkarim Hamdy, “*Experimental techniques for high resolution magnetic field detection using WGM based sensor*” M.Sc. thesis, German University in Cairo, Jan. (2018)
17. **Amir R. Ali** , Ahmed Mahmoud Abuali, “*DESIGN & FABRICATE AN ACTIVE PROSTHETIC LIMB FOR A QUADRUPED ANIMAL*”, B.Sc. thesis, German University in Cairo, spring (2018)
18. **Amir R. Ali** , Ahmed Mohamed Saad, “*CONTROL A ROBOTIC ARM for HUMAN ANATOMY*”, B.Sc. thesis, German University in Cairo, spring (2018)
19. **Amir R. Ali** , Ahmed Adel Sabet Mohamed, “*Trajectory Tracking Control for the KUKA robot* ”, B.Sc. thesis, German University in Cairo, spring (2018)
20. **Amir R. Ali** , Ahmed Emad Sayed, “*Trajectory Control of PUMA Robot*”, B.Sc. thesis, German University in Cairo, spring (2018)
21. **Amir R. Ali** , Amr Hisham Hassan, “*Design a robotic arm with your mind to play a game* ”, B.Sc. thesis, German University in Cairo, spring (2018)
22. **Amir R. Ali** , Mohamed Mohamed Anees, “*Control Rubik’s cube Solving Robot*”, B.Sc. thesis, German University in Cairo, spring (2018)
23. **Amir R. Ali** , Mohamed Ashraf Othman, “*SPHERE ROBOT FOR THE FACIAL EXPRESSION DETECTION (IMAGE PROCESSING AND SOUND PROCESSING)*”, B.Sc. thesis, German University in Cairo, spring (2018)
24. **Amir R. Ali** , David Ebrahim Assad, “*Artificial Skin for Bionic Robotic Arm Using Smart Optical Sensors* ”, B.Sc. thesis, German University in Cairo, spring (2018)

25. Amir R. Ali , Engy Abdou Kassem, “ *CONTROL A ROBOTIC ARM USING BRAIN SIGNAL (EEG) TO PLAY A GAME* ”, B.Sc. thesis, German University in Cairo, spring (2018)
26. Amir R. Ali , Karim Ihab Salah, “*Control for the SCARA robot trajectory tracking*”, B.Sc. thesis, German University in Cairo, spring (2018)
27. Amir R. Ali , Mahmoud Alaa Selim, “*Control System Design of Quadcopter* ”, B.Sc. thesis, German University in Cairo, spring (2018)
28. Amir R. Ali , Mahmoud Mohamed Mahmoud, “*Wirelessly Control a Cyborg Cockroach for Neurophotonics application*”, B.Sc. thesis, German University in Cairo, spring (2018)
29. Amir R. Ali , Mostafa Amgad Gohar, “*Design and Optimal Control of a Quadcopter Helicopter* ”, B.Sc. thesis, German University in Cairo, spring (2018)
30. Amir R. Ali , Shady Makram Ramzy, “*Effect of Nano Particles Aggregation on the Magnetic field Optical Sensor Used in the Neurophotonics Application* ”, B.Sc. thesis, German University in Cairo, spring (2018)
31. Amir R. Ali , Ziad Ashraf Hussine, “*Control a Wearable Glove for Parkinson’s Tremor* ”, B.Sc. thesis, German University in Cairo, spring (2018)
32. Amir R. Ali , Shaza Sameh, “*A novel technique for high-resolution measurements in vivo using optical biophotonic probe*” M.Sc. thesis, German University in Cairo, Jul. (2017)
33. Amir R. Ali , Mohamed Ashraf, “*Advanced techniques for electric field measurements using optical sensors*” M.Sc. thesis, German University in Cairo, July (2017)
34. Amir R. Ali , Yasmin Mohamed, “*Bio-optical sensor for brain activity measurement based on whispering gallery modes* ” M.Sc. thesis, German University in Cairo, Jul. (2017)
35. Amir R. Ali , Emad Elia, “*Modeling and Control for Industrial PUMA Manipulator: (Flexible Links and Flexible Joints)*”, B.Sc. thesis, German University in Cairo, spring (2017)
36. Amir R. Ali , Mahmoud Eldeeb, “*Gyro-sphere robot for navigation dangerous terrain*”, B.Sc. thesis, German University in Cairo, spring (2017)
37. Amir R. Ali , Omar El-Farouk, “*A wearable haptic interface for grasping in virtual reality and in tel-surgery operations*”, B.Sc. thesis, German University in Cairo, spring (2017)
38. Amir R. Ali , Mohamed Abdelhamid, “*Six DOF Stewart platform motion simulators*”, B.Sc. thesis, German University in Cairo, spring (2017)
39. Amir R. Ali , Khaled Elewa, “*3D plotter based on dual-arm SCARA robot*”, B.Sc. thesis, German University in Cairo, spring (2017)
40. Amir R. Ali , Dalia Mahfouz, “*Self-balancing stick- dual axis reaction wheel inverted pendulum and its application*”, B.Sc. thesis, German University in Cairo, spring (2017)
41. Amir R. Ali , Sarah El-Safty, “*Development of non-invasive brain-machine interface to control robotic hand in real-time*”, B.Sc. thesis, German University in Cairo, spring (2017)
42. Amir R. Ali , Yehia Ibrahim, “*Paralyzed human moves kuka robot with mind*”, B.Sc. thesis, German University in Cairo, spring (2017)
43. Amir R. Ali , Mohamed Oraby, “*Composite control for the Inertially Actuated Baton Locomotor*”, B.Sc. thesis, German University in Cairo, spring (2017)

44. Amir R. Ali, Mohamed Elkhoully, “*Autonomous Rubik’s Cube Solving Robot*”, B.Sc. thesis, German University in Cairo, spring (2017)
45. Amir R. Ali, Mahmoud Nasser, “*Dynamic Wearable Glove for Parkinson’s Tremor Suppression*”, B.Sc. thesis, German University in Cairo, spring (2017)
46. Amir R. Ali, Karim Mostafa, “*Modeling and Control for Delta Robot*”, B.Sc. thesis, German University in Cairo, spring (2017)
47. Amir R. Ali, Amr N. Afifi, “*Optical data processing and tracking of whispering gallery modes in real-time for sensing applications*”, M.Sc. thesis, German University in Cairo, Sept. (2016)
48. Amir R. Ali, Abanoub Abdelmalak, “*Communication Between Prosthetic Limbs and Peripheral Nerves of the Brain: Pressure Sensing*”, B.Sc. thesis, German University in Cairo, spring (2016)
49. Amir R. Ali, Abdelrahman Fekry, “*High Resolution Optical Sensors for Biomedical Application: Cancer Cell Detection*”, B.Sc. thesis, German University in Cairo, spring (2016)
50. Amir R. Ali, Abdelrahman Elbarshoumy, “*Design and Fabricate a Multi task Brain-Prosthetic Limb*”, B.Sc. thesis, German University in Cairo, spring (2016)
51. Amir R. Ali, Abram Megalli, “*Brain EEG Signal Processing for Controlling a Robotic Arm*”, B.Sc. thesis, German University in Cairo, spring (2016)
52. Amir R. Ali, Adham Elsafty, “*Control of a Robotic Arm through EEG*”, B.Sc. thesis, German University in Cairo, spring (2016)
53. Amir R. Ali, Ahmad Montaser, “*Artificial Muscle for Bionic Robot Arm*”, B.Sc. thesis, German University in Cairo, spring (2016)
54. Amir R. Ali, Ahmed El-demerdash, “*Modeling and Simulation a Micro-Robot in VIVO for Intraneural Pressure Measurements of the Muscles*”, B.Sc. thesis, German University in Cairo, spring (2016)
55. Amir R. Ali, Ahmed Elshrief, “*Design a High Resolution Angular Position Optical Sensor to Control a Rigid Link Robot Arm Manipulator*”, B.Sc. thesis, German University in Cairo, spring (2016)
56. Amir R. Ali, Ahmed Abozead, “*Design and Control a Portable Module for the WGM Optical Sensors with Laser Temperature Controller*”, B.Sc. thesis, German University in Cairo, spring (2016)
57. Amir R. Ali, Ahmed Elsheikh, “*Design and control a Michelson Interferometer for Bio-medical Applications*”, B.Sc. thesis, German University in Cairo, spring (2016)
58. Amir R. Ali, Ahmed Ibrahim, “*Locomotion study of a Robotic Exoskeleton for Gait Rehabilitation*”, B.Sc. thesis, German University in Cairo, spring (2016)
59. Amir R. Ali, Ahmed Hamam, “*Design and Control a Portable Module for the WGM Optical Sensors with Laser Current Controller*”, B.Sc. thesis, German University in Cairo, spring (2016)
60. Amir R. Ali, Ahmed Salah, “*Control and Design a 3D Printer*”, B.Sc. thesis, German University in Cairo, spring (2016)
61. Amir R. Ali, Ahmed Samir, “*High Resolution Optical Sensors for Aerodynamics Measurements Application: Wall Shear Stress*”, B.Sc. thesis, German University in Cairo, spring (2016)
62. Amir R. Ali, Ahmed Fouda, “*Laser Temperature Control for the Optical Sensors used in the Mechatronics Applications*”, B.Sc. thesis, German University in Cairo, spring (2016)

63. **Amir R. Ali**, Ali Bahaaeldin, “*Control a Master Robotic Arm Using Pneumatic Haptic Interface for Telesurgery Operations*”, B.Sc. thesis, German University in Cairo, spring (2016)
64. **Amir R. Ali**, Ali Ekrema, “*Autonomous Methodology to Control the Sensing Element used in Mechatronics Applications*”, B.Sc. thesis, German University in Cairo, spring (2016)
65. **Amir R. Ali**, Amr Abousetta, “*CAD Software Programming for a 3D Printer*”, B.Sc. thesis, German University in Cairo, spring (2016)
66. **Amir R. Ali**, Amr Gendy, “*Control Algorithm of a Robotic Exoskeleton for Gait Rehabilitation*”, B.Sc. thesis, German University in Cairo, spring (2016)
67. **Amir R. Ali**, Anas Khalifa, “*Design and Manufacturing a Bionic Robot Arm*”, B.Sc. thesis, German University in Cairo, spring (2016)
68. **Amir R. Ali**, Andrew Wahba, “*Design and Control a Bio-optical sensor for Balance Disorders Patients in one dimension*”, B.Sc. thesis, German University in Cairo, spring (2016)
69. **Amir R. Ali**, Andrew Habib, “*Design a High Resolution Angular Position Optical Sensor to Control a Flexible Joint Robot Arm Manipulator*”, B.Sc. thesis, German University in Cairo, spring (2016)
70. **Amir R. Ali**, Andrew Mosaad, “*Design and Control a Bio-optical sensor for Balance Disorders Patients in two dimension*”, B.Sc. thesis, German University in Cairo, spring (2016)
71. **Amir R. Ali**, Asmaa Elsayed, “*Vibration Control of Dynamic Magnetorheological Damper for Orthotic Tremor Suppression*”, B.Sc. thesis, German University in Cairo, spring (2016)
72. **Amir R. Ali**, Asser Ali, “*Control a Micro-Robot in VIVO for Intraneural Pressure Measurements of the Muscles*”, B.Sc. thesis, German University in Cairo, spring (2016)
73. **Amir R. Ali**, Eslam Katary, “*Sensing Development for Brain-Prosthetic Limb Interface*”, B.Sc. thesis, German University in Cairo, spring (2016)
74. **Amir R. Ali**, George Guindy, “*Artificial Skin for Bionic Robot Arm*”, B.Sc. thesis, German University in Cairo, spring (2016)
75. **Amir R. Ali**, Hazem Taha, “*Real-Time using FPGA for Data Tracking Algorithm for Bionic Robot Arm*”, B.Sc. thesis, German University in Cairo, spring (2016)
76. **Amir R. Ali**, Ibrahim Ezzat, “*Automated Data Tracking Algorithm for Bionic Robot Arm*”, B.Sc. thesis, German University in Cairo, spring (2016)
77. **Amir R. Ali**, Kareem Ehab, “*A Novel Technique for a Micro-Optical Actuator Used in Opto-Mechatronics Applications*”, B.Sc. thesis, German University in Cairo, spring (2016)
78. **Amir R. Ali**, Khaled Fathy, “*Enhancement the Electric Field Sensor Used in Brain-Prosthetic Limb Interface*”, B.Sc. thesis, German University in Cairo, spring (2016)
79. **Amir R. Ali**, Khaled Nader, “*Impulsive and Inertial Actuation Methods Applied to a Baton Locomotion Robot*”, B.Sc. thesis, German University in Cairo, spring (2016)
80. **Amir R. Ali**, Mahmoud Elshall, “*Design and Fabricate a Wind Tunnel Module using Optical Sensors for a Wall Shear Stress Measurements*”, B.Sc. thesis, German University in Cairo, spring (2016)
81. **Amir R. Ali**, Mamdouh Abuborda, “*Control the Opto-mechatronics Setup for the Sensor in the Mechatronics Applications*”, B.Sc. thesis, German University in Cairo, spring (2016)

82. **Amir R. Ali**, Marina Hani, “Control Motorized Rotational-Translation Stages in 3D axis to Manipulate Sensors Handling with Digital Interface controller”, B.Sc. thesis, German University in Cairo, spring (2016)
83. **Amir R. Ali**, Marwan Ali, “Design and Fabricate an Autonomous Self-Reconfigurable Locomotive Robot”, B.Sc. thesis, German University in Cairo, spring (2016)
84. **Amir R. Ali**, Michel Helmy, “Design and Fabricate a Flexible Joint Robot Arm Manipulator with Controller Interface”, B.Sc. thesis, German University in Cairo, spring (2016)
85. **Amir R. Ali**, Moataz Khaled, “Control Algorithm for the Brain-Controlled Prosthetic Limb”, B.Sc. thesis, German University in Cairo, spring (2016)
86. **Amir R. Ali**, Mohamed Zahran, “Design and Implementation of a Baton Robot with Double-Action Inertial Actuation”, B.Sc. thesis, German University in Cairo, spring (2016)
87. **Amir R. Ali**, Mohamed Elsayh, “Manufacturing Techniques for High-Resolution Sensing Element used in Mechatronics Applications”, B.Sc. thesis, German University in Cairo, spring (2016)
88. **Amir R. Ali**, Mohamed Sadek, “Vibration Control for Portable Optical Table Platform used in Mechatronics Applications”, B.Sc. thesis, German University in Cairo, spring (2016)
89. **Amir R. Ali**, Mohamed Hicham, “Modeling of a Baton Robot with Double-Action Inertial Actuation”, B.Sc. thesis, German University in Cairo, spring (2016)
90. **Amir R. Ali**, Mohamed Akid, “Control Algorithm of a Flexible Link Robot Arm Manipulator Using a High Resolution Micro-Optical Sensors”, B.Sc. thesis, German University in Cairo, spring (2016)
91. **Amir R. Ali**, Mohamed El-zahaby, “Modeling and Simulation of a Robotic Exoskeleton for Gait Rehabilitation”, B.Sc. thesis, German University in Cairo, spring (2016)
92. **Amir R. Ali**, Mohamed Afifi, “Data Tracking using DAQ for Data Tracking Algorithm for Bionic Robot Arm”, B.Sc. thesis, German University in Cairo, spring (2016)
93. **Amir R. Ali**, Mohamed Elmeligy, “Pneumatic Control for an Optical Table Platform used in Mechatronics Applications”, B.Sc. thesis, German University in Cairo, spring (2016)
94. **Amir R. Ali**, Mohannad Sorour, “Design and Fabricate a Robotic Arm through EEG”, B.Sc. thesis, German University in Cairo, spring (2016)
95. **Amir R. Ali**, Mostafa Hassan, “High Resolution Micro-Optical Smelling Sensors for Mechatronics Applications”, B.Sc. thesis, German University in Cairo, spring (2016)
96. **Amir R. Ali**, Noureldin Ali, “Control of a Baton Robot with Double-Action Inertial Actuation”, B.Sc. thesis, German University in Cairo, spring (2016)
97. **Amir R. Ali**, Omar Emam, “Trajectory Tracking Control for Optical Tweezer for in the drug Delivery Applications”, B.Sc. thesis, German University in Cairo, spring (2016)
98. **Amir R. Ali**, Omar Morsy, “Control Motorized Linear-Translation Stages in 3D axis to Manipulate Sensors Handling with Digital Interface controller”, B.Sc. thesis, German University in Cairo, spring (2016)
99. **Amir R. Ali**, Omar Elhamshary, “Vibration Control for Stationary Optical Table Platform used in Mechatronics Applications”, B.Sc. thesis, German University in Cairo, spring (2016)
100. **Amir R. Ali**, Omar Sayed, “Control an Autonomous Self-Reconfigurable Locomotive Robot”, B.Sc. thesis, German University in Cairo, spring (2016)



101. **Amir R. Ali** , Omar Farrakha, “*Design and control a Fabry-Perot Interferometer for Mechatronics Sensing Applications*” , B.Sc. thesis, German University in Cairo, spring (2016)
102. **Amir R. Ali** , Omar Ibrahim, “*High Resolution Magnetic Field Optical Sensor Used in Magnetic Ultra Long Wave therapy*” , B.Sc. thesis, German University in Cairo, spring (2016)
103. **Amir R. Ali** , Omar Morsy, “*Design a High Resolution Angular Position Optical Sensor to Control a Rigid Link Robot Arm Manipulator*” , B.Sc. thesis, German University in Cairo, spring (2016)
104. **Amir R. Ali** , Peter AtaAlaah, “*Communication Between Prosthetic Limbs and Peripheral Nerves of the Brain: Temperature Sensing*” , B.Sc. thesis, German University in Cairo, spring (2016)
105. **Amir R. Ali** , Sala Elmaghraby, “*Control a Slave KUKA Robot Arm Used for Telesurgery Operations*” , B.Sc. thesis, German University in Cairo, spring (2016)
106. **Amir R. Ali** , Saied Abdelaziz, “*Manufacturing Techniques for High-Bandwidth Sensing Element used in Mechatronics Applications*” , B.Sc. thesis, German University in Cairo, spring (2016)
107. **Amir R. Ali** , Ahmed Fathy, “*Design and Fabrication for Rotational-Translational Stages in 3D axis to Manipulate Sensors Handling with Digital Interface controller*” , B.Sc. thesis, German University in Cairo, spring (2016)
108. **Amir R. Ali** , Ahmed Yasser, “*Vibration Design and fabrication for Portable Optical Table Platform used in Mechatronics Applications*” , B.Sc. thesis, German University in Cairo, spring (2016)
109. **Amir R. Ali** , Ayah Ezzat, “*Design and Fabricate a Master Robotic Arm Using Pneumatic Haptic Interface for Telesurgery Operations*” , B.Sc. thesis, German University in Cairo, spring (2016)
110. **Amir R. Ali** , Jaylan Hannoura, “*Design and Fabricate of a Robotic Exoskeleton for Gait Rehabilitation*” , B.Sc. thesis, German University in Cairo, spring (2016)
111. **Amir R. Ali** , Lobna Abdel-zahir, “*Design and Fabricate a Small-Scale Magneto-rheological Damper for Tremor Suppression*” , B.Sc. thesis, German University in Cairo, spring (2016)
112. **Amir R. Ali** , Mohamed Emad, “*Design and Fabricate a Slave KUKA Robot Arm Used for Telesurgery Operations*” , B.Sc. thesis, German University in Cairo, spring (2016)
113. **Amir R. Ali** , Mostafa Ahmed, “*Design and Fabrication for Linear-Translation Stages in 3D axis to Manipulate Sensors Handling with Digital Interface controller*” , B.Sc. thesis, German University in Cairo, spring (2016)
114. **Amir R. Ali** , Omar Ashraf, “*Vibration Design and fabrication for Stationary Optical Table Platform used in Mechatronics Applications*” , B.Sc. thesis, German University in Cairo, spring (2016)
115. **Amir R. Ali** , Phelopateer Gendy, “*Design and Fabricate an Optical Tweezer for Biomedical Applications*” , B.Sc. thesis, German University in Cairo, spring (2016)

## Civic and Humanitarian Activities:

- Member of [Egypt Cancer Network (ECN)], which is a U.S. based non-profit, helps to further cancer education, research, and care as well as medical infrastructure in Egypt and throughout the region, since **2012-present**.
- Founder and Chair of Roboclub (Robotics for everyone). We are an Active Working Group (AWG) at the German University in Cairo, founded by Mechatronics Engineering students who share a passion for robotics and technology. We work in collaboration with IEEE RAS Egypt Chapter.

Aiming at spreading robotics knowledge and passion for all people with all backgrounds, through sessions, workshops, and competitions, since **2009-present.**