

Dr. Arockia Selvakumar Arockia Doss

Senior Associate Professor, Design and Automation Research Group, SMEC,
IEEE Senior Member, Assistant Director Career Development Centre,
VIT University, Tamil Nadu, India



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Tamil Nadu, India
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Profile

- A quality-oriented professional with nearly 20 years of experience in Teaching and Research.
- *Experienced in teaching subjects:* Robotics, Mechatronics System Design, Automation and Control, Finite Element Analysis, Design of Transmission Systems, Concepts of Engineering Design, Strength of Materials, Engineering Mechanics, Engineering Graphics. Handled Practical classes on Robot Dynamics and Analysis, Computer aided analysis and Simulation Lab (Ansys / MAT Lab), Mechatronics, CAD/ CAM Lab (ProE), Computer Aided Machine Drawing.
- Proficiency in handling the administrative activities ABET, IQAC, AICTE, NBA accreditation and ISO.
- Conducted various Technical workshops primarily on Robotics, VAP, Trainings, Seminars and Conferences.
- Currently playing an additional role as Assistant Director Placement & Training and Faculty In-Charge for Robotics activities.
- Have been a part of multiple international robotics conferences as a Keynote Speaker and Session Chair.

Education

Ph.D – Mechanical Engineering

(Robotics), Nov 2013

MIT Campus, Anna University Chennai,
Tamil Nadu, India

M.E – Computer Aided Design - 80.39%

April 2004

Anna University, Tamil Nadu, India
(University rank Holder)

B.E – Mechanical Engineering -76.67%

April 2001

Bharathiyar University, Tamil Nadu, India

Work Experience

Associate Professor (Senior)

Vellore Institute of Technology (VIT) University,
Chennai, Tamil Nadu, India

June 2013 to Present, Chennai, Tamil Nadu, India

Assistant Professor

Sri Venkateswara College of Engineering

June 2009 to May 2013, Sriperumbudur, Tamil
Nadu, India

Senior Lecturer

Sri Venkateswara College of Engineering,

June 2007 to May 2009, Sriperumbudur, Tamil
Nadu, India

Lecturer

Hindustan College of Engineering

July 2005 to June 2007, Padur, Tamil Nadu, India

Software

- **ANSYS** - Structural Analysis, Dynamic Analysis, Vibration Analysis, Design Optimization
 - **Pro/Engineer** - Part Design, Assembly Design, Manufacturing.
 - **CATIA** - Part Design, Assembly Design.
 - **ADAMS** - Simulation, Kinematic analysis, Dynamic analysis
 - **AutoCAD** - Drafting, Detailing
 - **MAT Lab** - Coding and Programming
 - **Hydrosim** - Simulation software (Mechatronics Lab) – Design of Hydraulic Circuits
 - **Pneumosim** - Simulation software (Mechatronics Lab) – Design of Pneumatic Circuits
 - **Workspace LT** - Simulation software (Mechatronics Lab) – Workspace Simulation and programming of robots
 - **Robot Studio** - Simulation software (Mechatronics Lab) – Simulation and programming of ABB robots
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Research Publications

Total Publications

International Journal	: 80
National Journal	: 07
International Conferences	: 04
National Conferences	: 30

Key Publications

- 1) Mary, J. Susai, MA Sai Balaji, A. Arockia Selvakumar, and D. Dinakaran. "*Adaptive controls of tool wear by grey wolf optimization and neural controller in drilling.*" International Journal of Robotics and Automation 36, no. 1 (2021).
- 2) Doss, Arockia Selvakumar Arockia, Deepak Venkatesh, and Mark Ovinis. "*Simulation and experimental studies of a mobile robot for underwater applications.*" International Journal of Robotics and Automation 36, no. 1 (2021).
- 3) Doss, Arockia Selvakumar Arockia, Pavan Kalyan Lingampally, and Latifah Nurahmi. "*Synthesis of a parallel manipulator based rehabilitation cervical collar for c-spine injured patients.*" International Journal of Robotics and Automation 36, no. 1 (2021).
- 4) Krishnakumar, K., and A. Arockia Selvakumar. "*Enhancement of Fatigue Strength on SAE 1541 Steel Link Plate with Slip Ball Burnishing Technique.*" Defence Science Journal 70, no. 4 (2020): 454-460.
- 5) Krishnasamy, K., Arockia Doss, A.S. "*Metallurgical Failure Analysis and Improved Core Hardness to Enhance Crushing Strength, Wear Resistance and Fatigue Strength of Chain Bush.* J Fail. Anal. and Preven. 20, 967–975 (2020). <https://doi.org/10.1007/s11668-020-00896-9>

- 6) Krishnakumar, K., and A. Arockia Selvakumar. "*Enhancement of Fatigue Strength on SAE 1541 Steel Link Plate with Slip Ball Burnishing Technique.*" Defence Science Journal 70, no. 4 (2020).
- 7) Vivek G, Arockia Selvakumar A, Manimaran R and Mamdud Hossain, *Obstacle Avoidance System and Wireless Communication for an Unmanned Underwater Vehicle*, International journal of Advanced Mechatronics Systems , Nov 2019 (Inderscience Publishers).
- 8) Arockia Selvakumar Arockiadoss, *Simulation and Experimental Investigations on 3 PRS Parallel Kinematic Machines*, International journal of Advanced Mechatronics Systems, 2019 (Inderscience Publishers).
- 9) Arka Das, Arockia Selvakumar Arockiadoss and Dinakaran D, *Maze Path Planning of Mobile Robots by Gradient Map Rendering and Gradient Follow*, International journal of Advanced Mechatronics Systems , Nov 2019 (Inderscience Publishers).
- 10) Pavan Kalyan Lingampally, Arockia Selvakumar A, *Kinematic and Workspace Analysis of a Parallel Rehabilitation Device for Head- Neck Injured Patients*, FME Transactions, Volume 47 Issue: 3, Pages: 405-411, 2019.
- 11) Saket Mukund Pardeshi, A Arockia Selvakumar, Vibhas Satyawar Tarfe, *Kinematic Analysis and Trajectory Planning of 4 DOF Articulated Manipulator*, Journal of Advanced Research in Dynamical and Control Systems, Volume 10 Issue: 3, Pages: 49-56, 2018.
- 12) Pulkit Sharma, A Arockia Selvakumar, *Conceptual Design and Non-Linear Analysis of Triphibian Drone*, Procedia Computer Science (Elsevier), Volume 133, Pages: 448-455, 2018.
- 13) M Manjunatha, A Arockia Selvakumar, Vivek P Godeswar, R Manimaran, *A Low Cost Underwater Robot with Grippers for Visual Inspection of External Pipeline Surface*, Procedia Computer Science (Elsevier), Volume 133, Pages: 108-115, 2018.
- 14) Janet J Fernandes, A Arockia Selvakumar, *Kinematic and Dynamic Analysis of 3PUU Parallel Manipulator for Medical Applications*, Procedia Computer Science (Elsevier), Volume 133, Pages: 604-611, 2018.
- 15) G Seeja, A Arockia Selvakumar, Berlin Hency, *A Survey on Swarm Robotic Modeling, Analysis and Hardware Architecture*, Procedia Computer Science (Elsevier), Volume 133, Pages: 478-485, 2018.
- 16) Aditya Vishwas Kanade, Dnyanesh, Arockia Selvakumar A, Jalamkar, Prabakaran Sengodan, Yousef Hasan F Jbara, *Development of IoT Controlled Agri-Rover for Automatic Seeding*, International Journal of Pure and Applied Mathematics, Volume 114 No. 11, Pages: 241-251, 2017.
- 17) Arockia Selvakumar A, *A Review on the Kinematic Simulation and Analyses of Parallel Manipulators*, Journal of Robotics & Automation Engineering, Volume 1 No. 2, Pages: 1-12, 2017.
- 18) Saket M. Pardeshi, Prajakta P. Pachore, Pratibha Nalini R, A Arockia Selvakumar, *Development of Low Cost Printable Modular Robot*, International Journal of Pure and Applied Mathematics Volume 114 No. 11, Pages: 253-263, 2017.
- 19) Tarwadi Parag Jitendra, Arockia Selvakumar Arockia Doss, Juan Antonio Corrales Ramon, *Manipulation and Path Planning for KUKA (LWR/LBR 4+) Robot in a Simulated and Real Environment*, Journal of Automation, Mobile Robotics & Intelligent Systems VOLUME 11, No. 3, Pages 15-21,2017.

- 20) Dholariya, Kaushal, & A. Arockia Selvakumar. "Conceptual Design and Kinematic Analysis of Humanoid Robot." *Indian Journal of Science and Technology* [Online], 9.34 (2016): n. pag. Web. 10 Jul. 2017.
- 21) Pavan Kalyan Lingampally, A Arockia Selvakumar "A Humanoid Neck Using Parallel Manipulators" International Conference On Robotics And Automation For Humanitarian Applications (RAHA). 2016.
- 22) Dileep Macha, R Manimaran, A Arockia Selvakumar "A Novel Design of a Counter- Flow Vortex Tube by Suitable Automation at Hot and Cold Ends" *Journal of Automation, Mobile Robotics & Intelligent Systems*, Volume 10, Issue 3, Pages 34-37, 2016.
- 23) Vibhas Satyawan Tarfe, A Arockia Selvakumar "Path tracing for ground wheeled robot in partially known environment" *International Journal of Information and Communication Technology*, (Inderscience Publishers)
- 24) Jalamkar, D., Selvakumar, A.: Use of internet of things in a humanoid robot—a review. *Adv. Robot. Autom.* 5, 150 (2015). doi:10.4172/2168-9695.1000150.
- 25) D. Venkatesh, A. Selvakumar, "A novel design of pneumatic actuator for camless engines". SAE Technical Paper, Issue 2016-01-0099. 2016.
- 26) A Arockia Selvakumar, R Sivaramakrishnan, Praveen Babu, M Venkatesh, "Inverse Kinematics and Experimental Investigation on 3–DOF Tripod Parallel Manipulator", *European Journal of Scientific Research*, Vol.86, Pages 5-16, 2014.
- 27) A. Arockia Selvakumar, R. Praveen Babu, R. Sivaramakrishnan, "A. Arockia Selvakumar, R. Praveen Babu, R. Sivaramakrishnan", *International Conference on Mechatronics and Automation (ICMA)*, China, 2012.

Patents - Applied

1. Inventors: Pavan Kalyan Lingampally, A Arockia Selvakumar, *An Orthopedic Wearable Device for Treating Patients with Cervical Spine Injuries*, Application No. 201841014653 A. 2018/4/20. Chennai, Tamil Nadu, India.
2. Inventors: Lalith Prabu. N, Nithish Kumar. R, A Arockia Selvakumar, *An IoT Based Agri-Bot For Roof Gardening Application*, Application No. 201841029021 A. 2018/8/02. Chennai, Tamil Nadu, India.
3. Inventors: Naman Garg, Tanmay Dhirajlal Gangani, Ankit Chakraborty, A Arockia Selvakumar, *Wireless Material Handling Robot*, Application No. 201741016097 A, 2017/5/19. Chennai, Tamil Nadu, India.
4. Inventors: Abhinav Ray Baruah, A Arockia Selvakumar, D Davidson Jebaseelan, Parth Mannan, Anish Deva, Sikhar Modi, *Direct Torque Transmission Mechanism For Rotary drive*, Application No. 201741014919 A, 2017/5/19. Chennai, Tamil Nadu, India.
5. Inventors: Jugal Ambrish Pi Thadiya, Ashish Babu Babare, A Arockia Selvakumar, *Robotic Friction Stir Welding Using Linear Type End Effector*, Application No. 201741014756 A, 2017/5/5. Chennai, Tamil Nadu, India.
6. Inventors: Akshay Kumar, Gunjan Patel, Gaurav Shalin, A Arockia Selvakumar, *ELECTROMAGNETICALLY ACTUATED BALL AND SOCKET JOINT*, Application No. 201741011934 A, 2017/4/21. Chennai, Tamil Nadu, India.

Ongoing Research Projects

1. Design and Control of a Parallel Architecture Wearable Assistive Neck Device for Rehabilitation Device, Innovation Entrepreneur Development Cell, India.
2. Artificial Intelligence based Agri-Drone for Agricultural Applications, Innovation Entrepreneur Development Cell, India.
3. Autonomous Robotic All-Terrain Vehicle, Innovation Entrepreneur Development Cell, India.
4. Development of Fully Autonomous Snake Robot for Earthquake Rescue Assistance, Tamil Nadu State Council for Science and Technology (TNSCST), India

International conferences & Congress (Outside India)

1. Presented a paper titled “Experimental Studies on 3-DOF Parallel Manipulators”, *Cambridge Summit 2018*, Cambridge, UK, January 4th to 8th 2018.
2. Delivered an invited talk at the “The 4th World Congress of Robotics, China (Shenyang)” under the title of “*Underwater Robotics*”, August 31- 1st September 2019
3. Chair for the Symposium “IoT in Robotics for Home and Industrial Automation”, *Indiana Summit 2019*, Purdue University, Indianapolis, USA, Oct 2-5, 2019. (Upcoming)
4. Keynote Speaker and Session chair at the “2019 International Conference on Electronic Engineering and Informatics”, Nanjing, China, Nov.8-10, 2019. (Upcoming)

Editorial Member

1. Journal of Advances in Robotics and Automation, OMICS online, USA, Europe, Japan, Australia
2. Journal of Automation, Control and Intelligent Systems, Science Publishing Group, USA.
3. Advisory Board Member of MARS SOCIETY of South Asia.

Advisory Board Member

Advisory Board Member of MARS SOCIETY of South Asia.

CONFERENCES/WORKSHOPS/OTHERS ORGANIZED

- National conference on Science Engineering and Technology, VIT Chennai, India, 14/11/2013.
- National Level Workshop on Robotics, VIT Chennai, India, 26/04/2014.
- FDP on CAD Using CATIA V6, VIT Chennai, India, 26-27 September 2014.
- Value Added Program on CAD Using CATIA V6 for Engineers from Valeo, VIT Chennai, India, 27 July -07 August 2015.
- Workshop on ABB Robot Studio, VIT Chennai, India, 23/4/2016.
- Workshop on Advances in Robotics and Automation, VIT Chennai, India, 24/2/2017.
- FDP on CAD Using CATIA, VIT Chennai, India, 26-27/03/2017.
- Make-A-Thon on Wireless Devices/Communication, VIT Chennai, India, 10-11 October 2017
- Scitech@2018, VIT Chennai, 24 February 2018.
- Workshop on Wheeled Robot, VIT Chennai, India, 23/02/2018
- Workshop on Raspberry Pi, VIT Chennai, India, 10/8/2018
- Workshop on Robo For Novice, VIT Chennai, India, 11th & 12th Oct 2018.
- VAP on CSWA Examination (SolidWorks), VIT Chennai, India, 17 October 2018.
- Make A Thon on Sensors in Robotics, VIT Chennai, India, 14-15 December 2018
- ROBOPRIX '19, VIT Chennai, India, 8-9 February 2019
- 5 Days Training Program on “A To Z of Robotics for Beginners”, VIT Chennai, India, 10th July to 21st September 2019 (Every Saturday)
- National Workshop on Recent Trends in Robotic Vision Systems, VIT Chennai, India, 02/08/2019.
- Workshop on ABB Robotics, VIT Chennai, India, 3rd August 2019
- 3 Days workshop on Grab the CAD, VIT Chennai, India, 12-14th September 2019.
- ROBOPRIX'19 2.0, VIT Chennai, India, 18-19 October 2019
- VAP on CSWA Examination (SolidWorks), VIT Chennai, India, 14-15 December 2019.
- Organized a Symposium on IOT in Robotics for Industrial and Home Automation, The 2nd World Summit on Advances in Science, Engineering

and Technology, October 3-5, 2019, Venue: Indiana University-Purdue University, Indianapolis, USA

- Indian Rover Challenge (IRC2020), VIT Chennai, India, 16-20 January 2020
- ROBOPRIX 2020, 21-22 February 2020
- FDP on Robotics and Automation, 13-18 July 2020.
- Webinar on Robotics and Automation, July 2020 to August 2020.
- Value Added Program on Simulation Tools in Robotics and Automation, 9,16 and 23 August 2020.
- International conference on Robotics, Intelligent Automation and Control Technologies (RIACT 2020), 2-3 October 2020
- RoboPrix2021, August 2021.
- VAP on Unmanned Aerial Vehicle, August 2021
- Workshop on C++ Path to ROS 14th to 21st July 2021
- Second International conference on Robotics, Intelligent Automation and Control Technologies (RIACT 2021), 23-25 September 2021.

CONFERENCES/WORKSHOPS/ OTHERS ATTENDED

2000

- Certificate of practical training in Central Workshop, Neyveli Lignite Corporation, India, 2/5/2000 to 20/05/2000.
- Certification Course on CAD, CADD Centre, India, 14/9/2000.
- Orientation Training in Process Department, Technip, Chennai, India, 4/5/2009 to 8/9/2009.

2001

- Attended Advanced CNC Programming & Operations (Including CAM), CAD/CAM Centre, PSG College of Technology, Coimbatore, India, Technip, Chennai, India, 17/9/2001 to 16/10/2001.

2007

- Attended One Day Workshop on Advances in Manufacturing Technology, MIT Campus, Anna University, India, 10/3/2007.
- Attended a Certificate course on “Training for Trainers and Assessors”, Hindustan Institute of Maritime Training, Chennai, India, 21 August 2007 to 03 September 2007.

- Presented a paper titled “Modelling and FEM Analysis of Gear Plate Housing in the National Conference on GTMTS 2007, Sedhu Institute of Technology, TN, India, 2007.
- Presented a paper titled “Gear Plate Redesigning and Analysis” in the National Conference on CADDAM 2007, AC Tech Karaikudi, TN, India, 2007.
- Presented a paper titled “Online Surface roughness Monitoring on Tool Wear” in the National Conference on CADDAM 2007, AC Tech Karaikudi, TN, India, 2007.
- Presented a paper titled “Modelling, Analysis and Synthesis of 3 DOF Tripod Parallel Manipulator” in the National Conference on Advances in Robotics, Precision Engineering and Manufacturing Techniques, MIT Campus, Anna University, TN, India, 14-15 March 2008.
- Presented a paper titled “Modelling, Analysis and Synthesis of 3 DOF Tripod Parallel Manipulator” in the National Conference on Advances in Robotics, Precision Engineering and Manufacturing Techniques, MIT Campus, Anna University, TN, India, 14-15 March 2008.

2008

- Presented a paper titled “Modelling, Analysis and Synthesis of 3 DOF Tripod Parallel Manipulator” in the National Conference on Advances in Robotics, Precision Engineering and Manufacturing Techniques, MIT Campus, Anna University, TN, India, 14-15 March 2008.
- Presented a paper titled “Workspace Analysis of 3 DOF Tripod Parallel Manipulator” in the 2nd National Conference on Advancements in Mechanical Sciences, Kumaraguru College of Technology, Coimbatore, TN, India, 27-28 March 2008.
- Presented a paper titled “Analytical Study on Dimensional Synthesis 3 DOF Tripod Parallel Manipulator” in the National Conference on Advancements in Manufacturing and Management Systems, Sri Sairam Engineering College, Chennai, TN, India, 17/04/2008.
- Attended 6 Days Workshop on MATLAB Image Processing Toolkit, VIT University, Vellore, India, 16-21 June 2008.
- Life Member of The Indian Society for Technical Education, India. LM58800, 2008.

2009

- Presented a paper titled “Modelling, Simulation and Synthesis of Parallel Manipulator” in the International Conference on Recent Advances in Material Processing Technology RAMPT, National engineering College, Kovilpatti, TN, India, 25-27 February 2009.
- Presented a paper titled “Dimensional Synthesis of Tripod Parallel Manipulator” in the International Conference on Emerging Research and Advances in Mechanical Engineering, Velammal engineering College, Chennai, TN, India, 19-21 March 2009.
- Attended Two Days Workshop on Recent Advancements and Challenges in Design Engineering, SVCE, Sriperumbudur, TN, India, 04-05 September 2009.
- Presented a paper titled “Kinematic Analysis of Tripod Parallel Manipulator” in the International Conference on Advances in Mechanical and Building Sciences, VIT Vellore, TN, India, 14-16 December 2009.
- Presented a paper titled “Analytical Study on Geometrical Parameters on Tripod Parallel Manipulator” in the International Conference on Advances in Mechanical and Building Sciences, VIT Vellore, TN, India, 14-16 December 2009.

2010

- Presented a paper titled “Simulation and Synthesis of Tripod Parallel Manipulator” in the International Conference on Frontiers in Mechanical Engineering, NITK Surathkal, India, 20-22 May 2010.
- Presented a paper titled “Simulation and Synthesis of Tri-Glide Parallel Manipulator” in the International Conference on Frontiers in Mechanical Engineering, NITK Surathkal, India, 20-22 May 2010.
- Presented a paper titled “Simulation and Synthesis of Tri-Glide Parallel Manipulator” in the INTERACT, Satyabhama University, India, 2010.

2011

- Attended 2 Days Workshop on “Workshop on Structural Analysis and Control Using Finite Element Method”, VIT University, Vellore, TN India, 28-29 January 2011.
- Attended AICTE Sponsored Staff development Programme on Robotics technology for Manufacturing, MIT Campus, Anna University, TN, India, 10-23 December 2011.

2012

- Attended One Day Seminar on Latest Advancement in Automotive Testing, Atalon & SVCE, Sriperumbudur, TN, India, 12/03/2012.
- Presented a paper titled “Simulation and Singularity Analysis of 3PRS Parallel Manipulator” in the International Conference on Mechatronics and Automation, ICMA, Chengdu, China, 5-8 August, 2012.
- Attended One Day Seminar on Simulation, Measurements and Condition monitoring, SVCE, Sriperumbudur, TN, India, 07/09/2012.
- Attended One Day Workshop on Recent trends in Engineering Tribology and Surface Characterization, SVCE, Sriperumbudur, TN, India, 29/09/2012.

2013

- Attended Comprehensive Training Programme on ARISTO ROBOT, MTAB Technology Centre Pvt Ltd, Chennai, TN, India, 30-31 December 2013.

2015

- National Conference on Trends and innovations in Mechanical Engineering, Design and Development of welding and Machining cell with Robot, 17th April 2015, Dr MGR University, India.
- Faculty Orientation Workshop, 1-6-2015 to 26-6-2015, VIT Chennai, India.
- All India Seminar on Critical Technology Issues: Mini-Underwater Vehicles, 11-12 March 2015, Institute of Engineers and National Design and Research forum, Bangalore, India

2016

- Session / Program Chair, International Conference on Mechanical Engineering Design, SSN College of Engineering, 25-26 April 2016.
- Attended Workshop on Proctor Roles and Responsibilities, 10-08-2016, VIT Chennai, India.
- Attended Workshop on Smart Board Training-Ver 1, 3-10-2016, VIT Chennai, India.
- Attended Workshop on Emotional Intelligence, 6-10-2016, VIT Chennai, India.
- Attended Workshop on Smart Board Training-Ver 2, 31-10-2016, VIT Chennai, India.
- Attended Workshop on Communicative Hindi - Introductory, 23-11-2016, VIT Chennai, India.

2017

- Attended Workshop on LaTeX for Researchers, 21-04-2017, VIT Chennai, India.
- Attended International conference on Advances in Robotics 2017, will be held at IIT Delhi, New Delhi, during June 28-July 2, 2017.
- Attended Workshop on Power of Punctuation, 23-08-2017, VIT Chennai, India.
- Attended 2 Days Training Program on Basics of Industrial Robo-Vision System conducted by MAS Robotics Pvt Ltd, 7-8 September 2017.

2018

- Presented a paper titled “ Design and Analysis of a Novel IOT Controlled Biomimetic Robotic Fish” in the 2nd International Conference on Innovative Research in Science, Technology and Management, International Institute of Research and Journals, NUS, Singapore, 29-30 September, 2018.
- Presented a paper titled “ Kinematic and Workspace analysis of a Parallel Rehabilitation Device for Head-Neck Injured Patients” in the International Conference on Robotics, Automation and Non Destructive Evaluation, Hindustan Institute of Technology & Science, Chennai, Tamil Nadu, India, 19-20 July 2018.
- Presented a paper titled “A novel Gripper Design for Diaphragm Spring Plate Pick and Place Robot” in the International Conference on Robotics, Automation and Non Destructive Evaluation, Hindustan Institute of Technology & Science, Chennai, Tamil Nadu, India, 19-20 July 2018.
- Presented a paper titled “Implementation of Internet of Things in a Mobile Humanoid Robot: A Base for Future of IOT Enabled Robotics Applications” in the International Conference on Robotics, Automation and Non Destructive Evaluation, Hindustan Institute of Technology & Science, Chennai, Tamil Nadu, India, 19-20 July 2018.
- Presented a paper titled “ Automation and Control of Chamfering Process” in the International Conference on Robotics, Automation and Non Destructive Evaluation, Hindustan Institute of Technology & Science, Chennai, Tamil Nadu, India, 19-20 July 2018.
- National Robotics Contest “ROBOCON 2018” organized by Doordarshan India, MIT Academy of Engineering, Pune, 1-3 March 2018.

- Presented a paper titled “ Automation and Control of Chamfering Process” in the International Conference on Robotics, Automation and Non Destructive Evaluation, Hindustan Institute of Technology & Science, Chennai, Tamil Nadu, India, 19-20 July 2018.
- Presented a paper titled “ Kinematic Simulation and Experimental Studies on 3PRS Parallel Kinematic Machines” in the World Summit on Advances in Science, Engineering and Technology, University of Cambridge, United Kingdom, 4-6 January 2018.

2019

- Presented a paper titled “CFD Simulation and Experimental Testing of a Mobile Robot for Underwater Applications” in the 2nd International Conference on Robotics, Automation and Non Destructive Evaluation, Hindustan Institute of Technology & Science, Chennai, Tamil Nadu, India, 29 and 30 August 2019.
- Presented a paper titled “Maze Path Planning of Mobile robots by Gradient Map Rendering and Gradient Follow” in the 2nd International Conference on Robotics, Automation and Non Destructive Evaluation, Hindustan Institute of Technology & Science, Chennai, Tamil Nadu, India, 29 and 30 August 2019.
- Presented a paper titled “Synthesis of a Parallel Manipulator Based Rehabilitation Cervical collar for C-Spine Injured Patients” in the 2nd International Conference on Robotics, Automation and Non Destructive Evaluation, Hindustan Institute of Technology & Science, Chennai, Tamil Nadu, India, 29 and 30 August 2019.
- Presented a paper titled “Simulation and Experimental Investigations on 3 PRS Parallel Kinematic Machines ” in the 2nd International Conference on Robotics, Automation and Non Destructive Evaluation, Hindustan Institute of Technology & Science, Chennai, Tamil Nadu, India, 29 and 30 August 2019.
- Presented a paper titled “Obstacle Avoidance System and Wireless Communication for an unmanned Underwater Vehicle ” in the 2nd International Conference on Robotics, Automation and Non Destructive Evaluation, Hindustan Institute of Technology & Science, Chennai, Tamil Nadu, India, 29 and 30 August 2019.

- Delivered a Keynote on “Autonomous Underwater Robotics for Low Depth Water Sources: Scientific Research Applications” in the 4th World Congress of Robotics, BIT Global Pvt Ltd, Shenyang, China, and 1/9/2019.
- Presented a paper titled “A Comparative study on Singularity analysis of 3 DOF Parallel Manipulators” The 2nd World Summit on Advances in Science, Engineering and Technology, October 3-5, 2019, Venue: Indiana University-Purdue University, Indianapolis, USA.

2020

- Presented a paper titled “Performance Evaluation of Fabricated Hybrid Composite Structures for Robot Applications - A Review” in the AICTE Sponsored Virtual conference on Integration of Advanced Technologies for Industry 4.0, KCG College of Technology, Chennai, Tamil Nadu, India, 12 June 2020.
- Attended International Faculty Development Programme on Robotics, Artificial Intelligence and Control, NIT Calicut, India, 3-8 February 2020.

CONTRIBUTION TO THE INSTITUTION

- Worked as Assistant Controller of Examination for Anna University Examinations at Hindustan College of Engineering (Years active 2005-2007)
- Worked as NBA Accreditation Department Coordinator at Sri Venkateswara College of Engineering (Years active 2007-2010)
- Worked as Assistant Controller of Examination for Anna University Examinations at Sri Venkateswara College of Engineering (Years active 2010-2012)
- Worked as ABET Coordinator for Mechanical Engineering Programme and successfully driven to closure (Years active 2013-2014) at VIT Chennai.
- Worked as IQAC Coordinator (NAAC, NIRF, UGC, AQAR and all other accreditation process) for SMBS and successfully driven to closure (Years active 2015 – 2018) at VIT Chennai.
- Assistant Director Placement and Training (2018 - Present) at VIT Chennai.
- IQAC – Teacher Member (Years active 2018 – Present) at VIT Chennai.
- Published 40+ research papers all of them being Scopus Indexed.
- Filed 7 patents on Robotics and automation and 6 are under review. One of them is in the 2nd examination stage.

- Presented research papers in three reputed international conferences (UK SUMMIT 2018, INDIANA SUMMIT 2019 – Symposium Chair for IOT in Robotics and Automation, The 4th World Congress of Robotics 2019 (WCR 2019), Shenyang, China – Keynote Speaker)
- I have got SEED FUND of Rs.3, 00, 000 for the project titled “Design and Control of Parallel Architecture Wearable Assistive Neck Device for Rehabilitation”.
- Faculty Coordinator for Robotics Teams and Clubs (Years active 2015 – Present). Acquired 5th place at Indian Rover Challenge, 2019.
- Worked in robotics club building from scratch and that has acquired the best professional club award 2019.

PUBLICATIONS IN DETAILS

Publications

International Journal / National Journal / International Conferences / National conferences / Patents Applied / Invited Talks / Editorial Member

2021

- Mary, J. Susai, MA Sai Balaji, A. Arockia Selvakumar, and D. Dinakaran. "ADAPTIVE CONTROL OF TOOL WEAR BY GREY WOLF OPTIMIZATION AND NEURAL CONTROLLER IN DRILLING." International Journal of Robotics and Automation 36, no. 1 (2021).
- Doss, Arockia Selvakumar Arockia, Deepak Venkatesh, and Mark Ovinis. "SIMULATION AND EXPERIMENTAL STUDIES OF A MOBILE ROBOT FOR UNDERWATER APPLICATIONS." International Journal of Robotics and Automation 36, no. 1 (2021).
- Doss, Arockia Selvakumar Arockia, Pavan Kalyan Lingampally, and Latifah Nurahmi. "SYNTHESIS OF A PARALLEL MANIPULATOR BASED REHABILITATION CERVICAL COLLAR FOR C-SPINE INJURED PATIENTS." International Journal of Robotics and Automation 36, no. 1 (2021).
- Omkar, Billa LR, Arockia Selvakumar Arockia Doss, and T. Christo Michael. "Design and Analysis of Coaxial Ducted Propulsion Systems of Unmanned Aerial Vehicles." In IOP Conference Series: Materials

- Science and Engineering, vol. 1012, no. 1, p. 012024. IOP Publishing, 2021.
- Abhishek, Talabattula Sai, Daniel Schilberg, and Arockia Selvakumar Arockia Doss. "Obstacle Avoidance Algorithms: A Review." In IOP Conference Series: Materials Science and Engineering, vol. 1012, no. 1, p. 012052. IOP Publishing, 2021.
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PATENTS APPLIED

- Inventors: Pavan Kalyan Lingampally, A Arockia Selvakumar, An Orthopedic Wearable Device for Treating Patients with Cervical Spine Injuries, Application No. 201841014653 A. 2018/4/20. Chennai, Tamil Nadu, India.
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INTERNATIONAL CONFERENCES & CONGRESS (OUTSIDE INDIA)

- Presented a paper titled “Experimental Studies on 3-DOF Parallel Manipulators”, Cambridge Summit 2018, Cambridge, UK, January 4th to 8th 2018.
- Delivered an invited talk at the “The 4th World Congress of Robotics, China (Shenyang)” under the title of “Underwater Robotics”, August 31-1st September 2019.
- Chair for the Symposium “IoT in Robotics for Home and Industrial Automation”, Indiana Summit 2019, Purdue University, Indianapolis, USA, Oct 2-5, 2019.
- Delivered an invited talk on “International Webinar on Robotics organized by Meetings International (Singapore), under the topic of Parallel Mechanism Based Rehabilitation Device for Neck Pain, 7th July 2020.
- Delivered an invited talk on “Parallel manipulator based Rehabilitation Device” at International days 2020, organized by Institute of Robotics and Mechatronics, University of Applied Sciences Bochum, Germany.

INVITED LECTURES

- Delivered an invited talk on Manipulators in Robotics AITCE Workshop on IOT, vision, architecture building applications and research challenges organized by Kongu Engineering College, Erode, 6th November 2019.
- Delivered an invited talk on Manipulators in Robotics: Research Applications, One day Global webinar organized by Christ University, Bangalore, India, 5th September 2020.
- Delivered an invited talk on “Industrial robotics: Research Applications”, organized by Bharath University, Chennai, TN, India, 15th October 2020.
- Delivered an invited talk on “Robot Kinematics” at ATAL FDP on Robotics Organized by NIT Allahabad, 2nd November 2020.
- Delivered an invited talk on “Research Trends in Robotics and Automation Research”, Webinar series on Advances in Materials and Manufacturing Automation organized by KPR Institute of Engineering and Technology, Coimbatore, TN, India, 22nd December 2020.

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