

PERSONAL INFORMATION



Tony Punnoose Valayil

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Sex Male | Date of birth 13/08/1987 | Nationality Indian

WORK EXPERIENCE

1. Researcher at Center of competence: "Intelligent mechatronic, eco- and energy-saving systems and technologies", Institute of Robotics, Bulgarian Academy of Sciences, Bulgaria.

January 2023- November 2023 (ongoing).
2. Post-Doctoral Fellow, Institute of Robotics, Bulgarian Academy of Sciences, Sofia, Bulgaria

July 2022-June 2024 (ongoing)
3. Assistant Professor, Department of Mechanical Engineering, Coimbatore Institute of Technology, Coimbatore, INDIA

July 2013 – April 2022
4. Assistant Professor, Department of Mechanical Engineering, Gurudeva Institute of Science and Technology, Kottayam, INDIA

June 2012– July 2013

EDUCATION AND TRAINING

Post-Doctoral Fellowship (Specialisation in Robotics)

Institute of Robotics, Bulgarian Academy of Sciences, Sofia, Bulgaria

2022-2024

Advisor: Prof. Tanio K. Tanev

Dissertation: Autonomous hybrid (serial-parallel) exoskeleton robot for rehabilitation of upper limb in stroke-affected patients

Ph. D. in Mechanical Engineering (Specialisation in Robotics)

Coimbatore Institute of Technology, Coimbatore, India
2014-2020

Advisor: Prof. V. Selladurai

Dissertation: Kinematic analysis of hybrid exoskeleton robot with spherical joints for rehabilitation of upper limb in stroke affected patients.

M. Tech. in Mechanical Engineering (Specialisation in Machine Design)

Saintgits College of Engineering, Kottayam, India

2009-2012

Advisor: Prof. Jaison Cherian Issac

Thesis: Crash Simulation in Ansys Ls-Dyna to explore the crash performance of composite and metallic materials.

B. E. in Mechanical Engineering

PSNA College of Engineering and Technology,

Dindigul, India

2005-2009

Advisor: Prof. Pal Pandi

Project: Replacement of fire brick lining by ceramic lining with P1 material in a furnace. (Industrial Project).

Mother tongue(s) Malayalam

Other language(s)

UNDERSTANDING		SPEAKING		WRITING
Listening	Reading	Spoken interaction	Spoken production	
English	English	English	English	English

Computer skills ▪ Matlab, Solidworks, Labview, Ansys.

ADDITIONAL INFORMATION

Selected Refereed Journal Publications

(SCOPUS Author ID: [57211095182](#))Published/in press (Science Citation Indexed (SCI) journals)

1. **Tony Punnoose Valayil**, Velappan, S, Pandian, P L, 2019, 'Analysing the Kinematic Characteristics of Bennett Mechanisms and its Networks for Usage in Forming Deployable Structures' *Mechanika*, vol.25, no. 4, pp. 269-275, Impact Factor: 0.529.
2. **Tony Punnoose Valayil** and Rose Shaji Augustine, 2021, 'Kinematic and workspace analysis of a robotic device for rehabilitation of upper limb in stroke-affected patients', *Acta of Bioengineering and Biomechanics*, Volume 23, No .3, 2021.

Journal Publications (Other Indexed journals)

1. **Tony Punnoose Valayil** & Dr. Jaison Cherian Issac, 'Crash Simulation in ANSYS LS-DYNA to Explore the Crash Performance of Composite and Metallic Materials', *International Journal for Scientific Engineering and Research*, Volume 8, Issue 4, 2013.
2. **Tony Punnoose Valayil**, Manoj Kumar S, Jowin I & Vignesh V 'Developing a Real Time System Using Labview for Monitoring and Controlling the Inside Temperature-A Greenhouse Automation', *Global Journal of Engineering Science and Research*, Volume 2, Issue 5, pg.17-21, 2015.
3. **Tony Punnoose Valayil**, V Selladurai & N R Ramaswamy 'Kinematic Modeling of a Serial Robot using Denavit-Hartenberg Method In MATLAB', *TAGA Journal of Graphic Technology*, Volume 14, pp. 2437-2445, 2018.
4. **Tony Punnoose Valayil**, P.Boopathi., 2020, "Prediction of Clapper Position and Chattering Verification in a Swing Check Valve using Hall Effect Sensor" in *Advancement of Mechanical Engineering and Technology*, HBRP Publication, Vol. 3, Issue 1.
5. **Tony Punnoose Valayil**, Dinesh Kumar, 2020, "Manufacturing Industry Workplace safety Using Image Processing",

- journal of advanced research in industrial engineering, HBRP Publication, Vol. 2 (1), pp.1-9.
6. **Dr Tony PunnooseValayil**, Dr. V. Selladurai and Dr. M. Velliangiri, 2020, "Modelling and Simulation of Spatial 4R and RRRS Mechanisms for Deploying in Making Ballistic Barrier", Tierärztliche Praxis, Vol 40, 2020.

Edited Books (as an Editor)

1. Dr. K. Marimuthu, Dr. R. Sathiskumar, **Dr. Tony Punnoose Valayil** "Proceedings of International conference on Industry 4.0" Hardcover ISBN:978-81-930396-5-6.

Selected Refereed Book Chapters (Scopus Indexed)

1. **Tony Punnoose Valayil**, "Kinematics and Foldability Analysis of Bennett Mechanisms and its Networks". In: Kumar R., Chauhan V.S., Talha M., Pathak H. (eds) Machines, Mechanism and Robotics, Lecture Notes in Mechanical Engineering, https://doi.org/10.1007/978-981-16-0550-5_162, Springer Nature Singapore Pte Ltd., 2021, pp. 1683-1692.
2. **Tony Punnoose Valayil**, and Rose Shaji Augustine "Methods to solve forward kinematics of parallel and serial manipulators" AIP Conference Proceedings 2670, 030003 (2022).
3. **Tony Punnoose Valayil**, and M.S.Bharanidharan "Quintic path for trajectory planning of a 2-DOF manipulator", AIP Conference Proceedings 2670, 060001 (2022).

Selected Refereed Conference Publications

1. **Tony Punnoose Valayil**, "Kinematics and Foldability Analysis of Bennett Mechanisms and its Networks", INACOMM 2019, IIT Mandi.
2. **Tony Punnoose Valayil** and Dr. Jaison Cherain Issac, International Conference on 'Global Innovations In Technology and Science' from 4th -6th April 2013 at SAINTGITS College of Engineering, Kottayam, and Presented a paper "Crash Simulation In ANSYS LS-DYNA To Explore The Crash Performance of Composite and Metallic Materials".
3. **Tony Punnoose Valayil**, 'Artificial Intelligence In Industry 4.0-Enabling Workplace Safety In Industry', in the First International Conference on Industry 4.0 Conducted by Coimbatore Institute of Technology, Coimbatore, from January 9th -11th 2019.
4. **Tony Punnoose Valayil** 'Kinematics and Workspace Analysis of a Six-Degree-of-Freedom Hybrid Robot Exoskeleton Robot for Rehabilitation of Stroke Affected Patients' in the First International Conference on 'Industry 4.0' Conducted by Coimbatore Institute of Technology, Coimbatore from January 9th -11th 2019.
5. **Tony Punnoose Valayil** 'A Review on Various Approaches for Solving Forward Kinematics of Parallel Robots' In The First International Conference on 'Industry 4.0' conducted by Coimbatore Institute of Technology, Coimbatore from January 9th -11th 2019.
6. **Tony Punnoose Valayil** "Manufacturing industry Workplace Safety Using Image Processing" at the International conference on Sustainable Innovations in Civil and Mechanical Engineering" Organized by Department of Civil and Mechanical Engineering at Mangalam College of Engineering, Ettumanoor, Kottayam, Kerala, from May 3-4, 2019.
7. **Tony Punnoose Valayil** and Rose Shaji Augustine "Method to solve the forward kinematics of parallel and serial manipulators" at the First International conference on Robotics, Automation and Intelligent systems" Organized by Department of Robotics Engineering at Karunya Institute of Technology and Science, Coimbatore, from November 12-13, 2021.
8. **Tony Punnoose Valayil** and M.S. Bharanidharan "Quintic path for trajectory planning of a 2-DOF manipulator" at the First International conference on Robotics, Automation and Intelligent systems" Organized by Department of Robotics Engineering at Karunya Institute of Technology and Science, Coimbatore, from November 12-13, 2021.

Honours and Awards

1. Post-Doctoral Fellowship from The Ministry of Education and Science of Bulgaria and the Bulgarian National Science Fund for the National Scientific Program "Petar Beron i NIE" (P. Beron) 2021.
2. Received the Summer Faculty Research Fellow (SFRF 2021) from IIT Delhi, INDIA.
3. Won the second prize in the e-Yantra Robotics competition (eYRC-2019) conducted by IIT Bombay.
4. Selected as one of the eleven finalist teams out of 92 teams in the e-Yantra Ideas Competition (eYIC-2015) held at IIT Bombay on 11th April 2015.

5. Team Leader for Robotics Teacher's Team of CIT, and participated in the e-Yantra Robotics Teacher competition conducted by IIT Bombay on December 16, 2014 and won the second prize in Regional finals.
6. Selected as one of the Regional Finalist Team in the e-Yantra Ideas Competition (eYIC- 2017) held at GRD College, Coimbatore on 4th April 2017, conducted by IIT Bombay.
7. Won third prize in a technical event "INNOVAY '19" conducted by Schlumberger, India on "Digitization Problem" at Cameron, Coimbatore on October 2019.

Patents

1. M. Arunachalam and **Tony Punnoose Valayil**, SINGLE UNIT MULTIPLE SIZE ALLEN KEY, India, 202141016996, 2021 (Applied, The Patent Office Challan: TR-5, Docket No. 31506 Dated 12/04/2021)

Summary of Publications

1. Journal Papers/articles: 8 (Published)
2. Patents: 1 (Indian Patents, Applied)
3. Edited Book (as an Editor): 1 (Published)
4. Book Chapters: 3 (Published)
5. International Conferences: 4

REFERENCES

1. Dr. V. Selladurai - (Ph.D. Supervisor)
Principal/Professor
Coimbatore Institute of Technology (CIT),
Coimbatore, India
Email:selladurai.v@gmail.com
2. Dr. Jason Cherian Issac - (M.Tech. Supervisor)
Professor
SAINTGITS College of Engineering, Kerala, India
Email:Jason.cherian@saintgits.org
3. Dr. Deepak Joshi, (SFRF 2021 @IIT Delhi Mentor)
Associate Professor,
Centre for Biomedical Engineering, IIT Delhi and
Associate Professor AIIMS, New Delhi.
Email: joshid@iitd.ac.in
4. Dr. Tanio K. Tanev (Post-doctoral fellowship supervisor)
Professor and Head
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Academic ID's

