

National Institute of Technology, Tiruchirappalli:
Performa for CV of Faculty/ Staff Members

Curriculum Vitae



Brief Profile:

Dr. V. Sankaranarayanan received Ph.D. in Systems and Control Engineering from Indian Institute of Technology Bombay, India in 2006 and post-doctorate from Istanbul Technical University Istanbul, Turkey during 2006-2008. Currently, He is working as a Professor in the department of Electrical and Electronics Engineering, National Institute of Technology, Tiruchirappalli, India. His research interests include Control of an Underactuated Robotic Systems, Nonlinear Control of Power Electronic Systems, Constrained stabilization of Mobile Robots and Electric Vehicle.

1. Name: Dr. V. Sankaranarayanan

2. Designation: Professor & Head

3. Office Address:

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Department of Electrical and Electronics
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India

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5. Email (Primary): vsankar@nitt.edu

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6. Field(s) of Specialization:

- Control of an Underactuated Robotic Systems
- Nonlinear Control of Power Electronic Systems.
- Constrained stabilization of Mobile Robots.
- Electric Vehicle.

7. Employment Profile

Job Title	Employer	From	To
Professor	Dept. of Electrical and Electronics Engineering, NIT Tiruchirappalli	October 2019	Present

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Associate Professor	Dept. of Electrical and Electronics Engineering, NIT Tiruchirappalli	December 2011	September 2019
Assistant Professor	Dept. of Electrical and Electronics Engineering, NIT Tiruchirappalli	November 2008	November 2011
Postdoctoral Researcher	Istanbul Technical University - Istanbul, Turkey	2006	2008

8. Academic Qualifications (From Highest Degree to High School):

Examination	Board / University	Year	Division/ Grade	Subjects
Ph.D.	Indian Institute of Technology Bombay, Mumbai, India	2005	-	Systems & Control Engineering
M.Tech.	National Institute of Technology - Tiruchirappalli, Tamilnadu, India	1999	First class with distinction	Energy Engineering
B.E	Govt. College of Engineering - Tirunelveli, Tamilnadu, India	1997	First Class	Electrical & Electronics Engineering

9. Academic/Administrative Responsibilities within the University

Position	Faculty/Department/Centre/Institution	From	To
Head of the Department	Electrical and Electronics Engineering	December 2019	Till date

10. Academic/Administrative Responsibilities outside the University

Position	Institution	From	To
BoS Member	PSG College of Technology, Coimbatore Institute of Technology, National Engineering College, Pavai College of Engineering, SONA College of Technology.	-	-

11. Awards, Associateships etc.

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Year of Award	Name of the Award	Awarding Organization

12. Fellowships

Year of Award	Name of the Fellowship	Awarding Organization	From (Month/Year)	To (Month/Year)
2008	Postdoctoral Researcher	Istanbul Technical University - Istanbul, Turkey	2006	2008

13. Details of Academic Work

- (i) Curriculum Development
- (ii) Courses taught at Postgraduate and Undergraduate levels
 - Control Systems
 - Linear and Non-Linear Control Systems
 - System Theory
 - Electric Vehicle Technology
- (iii) Projects guided at Postgraduate level
- (iv) Other contribution(s)

14. Details of Major R&D Projects

Title of Project	Funding Agency	Duration		Status
		From	To	Ongoing/ Completed
Coordination, path planning and control of mobile robots	SERB,DST Govt. of India	-	-	Completed
3D modelling and engineering design validation of 12m E-Bus	BHEL-Trichy	August 2018	July 2019	Completed
Evaluating criteria for battery condition assessment	BHEL-Trichy	August 2018	July 2019	Completed
Design of thermal performance evaluating system with charging -discharging circuit for Li-ion battery for E-Vehicle	BHEL-Trichy	August 2018	July 2019	Completed

15. Number of PhDs guided

Name of the PhD Scholar	Title of PhD Thesis	Role(Supervisor/ Co-Supervisor)	Year of Award

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R. M. Brisilla	Control of under actuated mechanical systems	Supervisor	2016
M. S. Sunila	Sliding mode control of uncertain nonlinear systems	Supervisor	2019
M. Padmagirisan	Control of Electric vehicles	Supervisor	2019
D. Menaga	Sliding mode control of single state grid connected photovoltaic system	Supervisor	2021
Joseph Godfry	Regenerative braking in electric vehicle	Supervisor	Ongoing
Sowmya R	Scheduling strategies for Electric vehicles	Supervisor	Ongoing
Abhaya Kumar Sahoo	Battery Management System	Supervisor	Ongoing

16. Participation in Workshops/ Symposia/ Conferences/ Colloquia /Seminars/ Schools etc. (mentioning the role)

Date (s)	Title of Activity	Level of Event (International/ National/ Local)	Role (Participant/ Speaker/ Chairperson, Paper presenter, Any other)	Event Organized by	Venue

17. Workshops/ Symposia/ Conferences/ Colloquia/Seminars Organized (as Chairman/ Organizing Secretary/ Convenor / Co-Convenor)

Title of Activity	Level of Event (International/ National/ Local)	Date (s)	Role	Venue

18. Invited Talks delivered

Topic	Date	Inviting Organization

19. Membership of Learned Societies

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Type of Membership (Ordinary Member/ Honorary Member / Life Member)	Organization	Membership No. with date

20. Academic Foreign Visits

Country	Duration of Visit	Programme
Conference on Decision and Control (CDC), China	2019	Paper Presentation
Nanyang Technological University, Singapore	2011 – 15 days	Visiting Faculty
Istanbul Technical University - Istanbul, Turkey	2006 - 2008	Post doctorate Fellowship

21. Publications

(A) Refereed Research Journals:

Author(s)	Title of Paper	Journal	Volume (No.)	Page numbers	Year	Impact Factor of the Journal (Optional)
Menaga. D, V.Sankaranarayanan	Robust nonlinear controller design for optimized battery performance in the photovoltaic-battery tied hybrid system using sliding mode control	European Journal of Control	65	19	2022	2.649
Sowmya R, V. Sankaranarayanan	Optimal Scheduling of Electric Vehicle Charging at Geographically Dispersed Charging Stations with Multiple Charging Piles.	International Journal of Intelligent Transportation and Research	-	-	2022	-

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Sowmya R, V. Sankaranarayanan	Optimal vehicle-to-grid and grid-to-vehicle scheduling strategy with uncertainty management using improved marine predator algorithm	Computers and Electrical Engineering	100	25	2022	4.152
Menaga. D, V. Sankaranarayanan	Performance comparison for grid connected photovoltaic system using sliding mode control	Journal of King Saud University - Engineering Sciences	33	276-283	2021	4.695
Menaga. D, V. Sankaranarayanan	A novel nonlinear sliding mode controller for a single stage grid-connected photovoltaic system	ISA Transactions	107	329-339	2020	5.911
AJ Godfrey, V. Sankaranarayanan	An Electric Braking Scheme for a BLDC Motor Driven Electric Vehicle	Power Research	16	173-180	2020	4.08
P Padmagirisan, V. Sankaranarayanan	Powertrain control of a solar photovoltaic-battery powered hybrid electric vehicle	Frontiers in Energy	13	296-306	2019	2.709
P Padmagirisan, Sowmya R, V.Sankaranarayanan	Power-assist control of a human–electric hybrid bicycle with energy regeneration and cruise control	Proceedings of the Institution of Mechanical Engineers,	233	179-191	2019	1.166
M. S. Sunila, V.Sankaranarayanan, K.Sundereswaran	Optimised sliding mode control for MIMO uncertain non-linear system with mismatched disturbances	Electronics Letters	54	290-291	2018	

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AJ Godfrey, V.Sankaranarayanan	A new electric braking system with energy regeneration for a BLDC motor driven electric vehicle	Engineering Science and Technology, an International Journal	21	704-713	2018	5.155
M. S. Sunila, V.Sankaranarayanan, K.Sundereswaran	Comparative analysis of optimized output regulation of a SISO nonlinear system using different sliding manifolds	International Journal of Automation and Computing	14	450-462	2017	3.175
R. M. Brisilla, V.Sankaranarayanan	Extended State Observer-Based Sliding Mode Control for Multi-input Multi-output System with Multiple Disturbances	Journal of Control, Automation and Electrical Systems	28	11-25	2017	1.564
R. M. Brisilla, V.Sankaranarayanan	Stabilisation of nonholonomic wheeled mobile robot using switched control - theory and experiment	International Journal of Automation and Control	10	193-213	2016	3.175
R. M. Brisilla, V.Sankaranarayanan	Nonlinear control of mobile inverted pendulum	Robotics and Autonomous Systems, Elsevier	70	145-155	2015	3.7
V.Sankaranarayanan, Arun. D.Mahindrakar	Configuration constrained stabilization of a wheeled mobile robot -Theory and Experiment	IEEE Transactions on Control System Technology	21	275-280	2013	5.418

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V.Sankaranarayanan, Arun. D.Mahindrakar, Apilash P M	Output feedback second-order sliding mode control of the cart on a beam system	International Journal of Robust and Nonlinear Control	20	561-570	2010	4.13
V.Sankaranarayanan, Arun. D. Mahindrakar	Control of a class of under actuated mechanical systems using sliding modes	IEEE Transactions on Robotics	25	459-467	2009	6.835
V.Sankaranarayanan, Levent Guvenc	Laser scanners for driver-assistance systems in intelligent vehicles	IEEE Control System Magazine	29	17-19	2009	3.661
V.Sankaranarayanan, Arun. D. Mahindrakar	Switched control of nonholonomic mobile robot	Communicati ons in Nonlinear Science and Numerical Simulation, Elsevier publication	14	2319- 2327	2009	4.186
V.Sankaranarayanan, M. Engin Emekli, Bilin Aksun Govern, Levent Guvenc, E. Serdar Ozturk, S. Server Ersolmaz, I. Erhan Eyol, Mustafa Sinal	Semi-Active Suspension Control of a Light Commercial Vehicle	IEEE/ASME Transactions on Mechatronics	13	598-604	2008	5.867

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V.Sankaranarayanan, Arun D. Mahindrakar, Ravi N. Banavar	A switched controller for an Underactuated underwater vehicle	Communications in Nonlinear Science and Numerical Simulations, Elsevier publication	13	2266-2278	2008	4.186
Arun D. Mahindrakar, V. Sankaranarayanan	State constrained stabilization of beam-balance systems	International Journal of Robust and Nonlinear Control	18	333-350	2008	4.13
V.Sankaranarayanan, Levent Güvenç	Tire Pressure Monitoring	IEEE Control System Magazine	27	22-25	2007	3.661

(B) Conferences/Workshops/Symposia Proceedings

Author(s)	Title of Abstract/ Paper	Title of the Proceedings	Page numbers	Conference Theme	Venue	Year
Palash Jain, Sudipto Saha, V. Sankaranarayanan	Robust Lyapunov based Observer for Estimation of SoC of Lithium-Ion Battery	2021 Innovations in Energy Management and Renewable Resources	1-5	Energy Management and Renewable Resources	Kolkata, India	2021
Palash Jain, Sudipto Saha, V. Sankaranarayanan	Novel method to Estimate SoH of Lithium-Ion Batteries	2021 Innovations in Energy Management and Renewable Resources	1-5	Energy Management and Renewable Resources	Kolkata, India	2021

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Vishvajit Sudhakar Kadam, R Sowmya, V. Sankaranarayanan	Optimal Coordinated Charging Strategy for Electric Vehicles at Geographically Distributed Charging Stations	2019 National Power Electronics Conference (NPEC)	1-6	Power Electronics	Tiruchirappalli, India	2019
R Sowmya, V. Sankaranarayanan	An Optimal Model for Electric Vehicle Battery Charging and Discharging Scheduling Strategy	2019 National Power Electronics Conference (NPEC)	1-6	Power Electronics	Tiruchirappalli, India	2019
M. S. Sunila, V. Sankaranarayanan	Optimized sliding mode control for input-output linearized MIMO nonlinear system	2018 International Conference on Power, Instrumentation, Control and Computing (PICC)	1-6	Power, Instrumentation, Control and Computing	Thrissur, India	2018
Juhi Ajmera ,V. Sankaranarayanan	Point-to-Point Control of a Quadrotor: Theory and Experiment	4th IFAC Conference on Advances in Control and Optimization of Dynamical Systems ACODS 2016	401-406	Advances in Control and Optimization of Dynamical Systems	Tiruchirappalli, India	2016

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R. M. Brisilla, V. Sankaranarayanan, AJ Godfrey	Extended state observer based sliding mode control of permanent magnet dc motor	12th IEEE International Conference Electronics, Energy, Environment, Communication, Computer, Control: (E3-C3), INDICON 2015	1-6	Electronics, Energy, Environment, Communication, Computer, Control	New Delhi, India	2015
Juhi Ajmera ,V. Sankaranarayanan	Trajectory Tracking Control of a Quadrotor	2015 International Conference on Control, Communication & Computing India (ICCC)	48-53	Control and Communication & Computing India	Trivandrum, India	2015
Juhi Ajmera, Siddharthan PR, Ramaravind K.M., Gautham Vasana, Naresh Balaji, V. Sankaranarayanan	Autonomous Visual Tracking and Landing of a Quadrotor on a Moving Platform	2015 Third International Conference on Image Information Processing	342-347	Image Information Processing	Waknaghat , India	2015
V.Sankaranarayanan, R Sowmya	Torque sensorless control of a human-electric hybrid bicycle	2015 International Conference on Industrial Instrumentation and Control (ICIC)	806-810	Industrial Instrumentation and Control	Pune, India	2015
S. R. Sahoo, R. M.	Disturbance	2015 IEEE	1-5	Signal	Kozhikode	2015

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Brisilla and V. Sankaranarayanan	observer based adaptive sliding mode control: An application to single machine infinite bus power system	International Conference on Signal Processing, Informatics, Communication and Energy Systems (SPICES)		Processing, Informatics, Communication and Energy Systems	, India	
Kiran K. Gautam, V.Sankaranarayanan	Sliding Mode Control of Surface Mounted Permanent Magnet Synchronous Generator	3rd International Conference on Advances in Control and Optimization of Dynamical Systems (2014)	1034 - 1038	Advances in Control and Optimization of Dynamical Systems	Kanpur, India	2014
M. Lavanya, R. M. Brisilla, V. Sankaranarayanan	Higher Order Sliding Mode Control of Permanent Magnet DC Motor	12th IEEE Workshop on Variable Structure Systems	226- 230	Variable Structure Systems	Mumbai, India	2012
Neetha P V.Sankaranarayanan	Study of a Novel Underactuated System of Degree 2	Proceedings of 2nd International Conference on Advances in Control and Optimization of Dynamical Systems (ACODS - 2012)		Advances in Control and Optimization of Dynamical Systems	IISc, Bangalore, India.	2012

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Vijay Muralidharan, Arun D. Mahindrakar, V.Sankaranarayanan	A Constructive Method for Designing Higher Order Sliding Surfaces for Single-input Nonlinear System	Proceedings of the 18th World Congress. The International Federation of Automatic Control	3944 - 3949	Automatic Control	Milano (Italy)	2011
Brisilla Mary, Linga Reddy and V.Sankaranarayanan	Output feedback nonlinear control of a buck-boost converter	Proceedings of 5th National Power Electronic Conference (NPEC)		Power Electronic	West Bengal, India.	2010
V.Sankaranarayanan, S.Anantharaman, A. B. Aswin Chandarr, K. Sri Adarsh	Modelling and Constrained Stabilization of the Inverted Pendulum on a Cart Beam system	Joint 48th IEEE Conference on Decision and Control and 28th Chinese Control Conference	7955 - 7959	Decision and Control	Shanghai, China	2009

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V.Sankaranarayanan ,Guvenc, L., Oncu, S., Ozcan, D	Vehicle chassis control using adaptive semi-active suspension	17th World Congress, International Federation of Automatic Control, IFAC		Automatic Control	Seoul, South Korea	2008
Dinçer Özcan, Levent Güvenç, Bilin Aksun Güvenç Sienna Öncü, V.Sankaranarayanan, Emre Kural	An Overview of Applied Research Activities of ITUMekar and Ford Otosan on Active Chassis Control of Light Commercial Vehicles	Proceedings of ICAT 2008, Istanbul-TURKEY		Control of Light Commercial Vehicles	Istanbul-TURKEY	2008
V.Sankaranarayanan, M. Engin Emekli1, Bilin Aksun G'uvenc, Levent G'uvenc, E. Serdar Ozt'urk, S. Server Ersolmaz, I. Erhan Eyol and Mustafa Sinal	Observer Based Semi-Active Suspension Control Applied to a Light Commercial Vehicle	2007 IEEE/ASME International Conference on Advanced Intelligent Mechatronics , AIM		Advanced Intelligent Mechatronics	Zurich, Switzerland	2007
M. Engin Emekli, V.Sankaranarayanan, Bilin Aksun Güvenç, Levent Güvenç ,E. Serdar Oztürk, Ş. Server Ersolmaz, I. Erhan Eyol, Mustafa Sinal	Transient Active Body Control of a Ford Transit Connect using Semi-active Suspensions	SAE Technical Papers			United States	2007
Arun D. Mahindrakar and V.Sankaranarayanan	Nonlinear control of a beam balance system with a single electromagnet	Proceedings of the 1st International Conference on Advances in Control and Optimization of Dynamical Systems (AC ODS' 07)	340-343	Advances in Control and Optimization of Dynamical Systems	IISc, Bangalore, India	2007

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V.Sankaranarayanan, Arun D. Mahindrakar, and Ravi N. Banavar	A note on the robust stability of nonholonomic systems	Proceedings of the 1st International Conference on Advances in Control and Optimization of Dynamical Systems (AC ODS' 07)	428-431	Advances in Control and Optimization of Dynamical Systems	IISc, Bangalore, India	2007
V.Sankaranarayanan and Ravi N. Banavar	Output feedback stabilization of a mobile robot	Proceedings of Methods and Trends in Nonlinear Systems (MTNS)	315-321	Methods and Trends in Nonlinear Systems	Kyoto, Japan	2006
V.Sankaranarayanan, Ravi N. Banavar	STABILIZATION OF AN UNDERWATER VEHICLE	16th Triennial World Congress, Prague	580-585		Prague, Czech Republic	2005
V.Sankaranarayanan, Arun D. Mahindrakar, Ravi N. Banavar	A switched finite-time point-to-point control strategy for an underactuated underwater vehicle	Proceedings of the IEEE Conference on Control Applications	690 - 694	Control Applications	Istanbul, Turkey	2003

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(C) Books & Monographs

Author(s)	Title of Book/Monograph	Name of Publishers	Year of Publication	ISSN/ISBN Number
Ravi N. Banavar and V. Sankaranarayanan	Switched finite-time control of a class of Underactuated systems	Springer	2006	978-3-540-32852-0