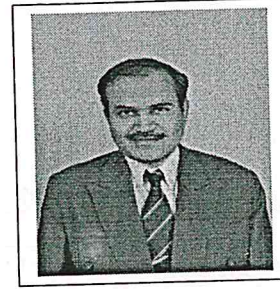


# RESUME

**Name:** Dr. Ajay Vishnu Deshmukh

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Pune 411009, Maharashtra, India  
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## Date/Place of Birth and Nationality

<b>Date of Birth</b>	7 <sup>th</sup> January 1967
<b>Place of Birth</b>	Vidul, Tq. Umarkhed, Dt. Yeotmal, Maharashtra
<b>Gender</b>	Male
<b>Marital Status</b>	Married
<b>Nationality</b>	Indian
<b>Mother Tongue</b>	Marathi
<b>Category</b>	Open

## Educational Qualifications:

**Ph.D. IIT Bombay, 2006**

**Thesis:** Novel Transform Methods for Processing the Sequences in Magnetic Resonance Imaging

**Supervisor:** Prof. Vikaram M. Gadre, Department of EE. IIT Bombay

**M. E. Instrumentation Engineering**, Shri Guru Gobindsinghji College of Engineering and Technology, Nanded, 1994 (77.6%)

**B. E. Instrumentation Engineering**, from Shri Guru Gobind Singhji College of Engineering and Technology, Nanded, 1989 (62.9 %)

**Experience:** 30 Years of Academic, Administrative Experience, and as the Consultant to Industries, Since 2021.

## Present Designations:

- Director, Centre for Industrial Mathematics, Bhaskaracharya Pratishthana, Pune
- Independent Director, Affordable Robotics and Automation Ltd.
- Founder Director Resonance Automation and Consultant to Industries

### Recently Complete Assignments

- i. Recently finished work as the Sr. Project Manager, IIT Bombay, at Solapur for the SMART CITY Project (Water supply systems, SCADA, Flow metering, Valves) , from 16<sup>th</sup> May 2023 to 23 August 2023
- ii. Worked as the Consultant to Philips Healthcare, Chakan, Pune for Life Cycle Management of RF Coils of Magnetic Resonance Imaging (MRI), and End to End Technology Guidance, Capability Development, Capacity Building from 23 March 2022 to 31 July 2022.

### Conferences & Seminars Organized

- A one day workshop on 'Applicable Mathematics', organized by the Centre for Industrial Mathematics, Bhaskaracharya Pratishthana, Pune, on 22 May 2022
- A one day workshop on Mathematical Modeling for Solving Industrial Problems using Excel, TK Solver and Galaxy, organized by the Centre for Industrial Mathematics, Bhaskaracharya Pratishthana, Pune, on 22 April 2022
- A one day workshop on Mathematical Modeling for Solving Industrial Problems using Excel, TK Solver and Galaxy, organized by the Centre for Industrial Mathematics, Bhaskaracharya Pratishthana, Pune, on 10 December 2021
- Paper Presentation Competition, organized by the Centre for Industrial Mathematics, Bhaskaracharya Pratishthana, Pune on 19<sup>th</sup> December 2021
- FDP on Medical Imaging, "Special Topics in Medical Imaging", organized by Bhaskaracharya Pratishthana, Pune, supported by TEQIP-III DBATU Lonere, 24,25 Sept 2021 (hosted by Arvind Gavali COE Satara and Orchid COET Solapur)
- A Symposium on Science, Technology, Engineering and Mathematics, organized by Bhaskaracharya Pratishthana, Pune, supported by TEQIP-III DBATU Lonere, 17,18 Sept 2021 (host KBP COE Satara)
- A National Workshop on "Modern Embedded Systems and Computing", organized by Quantum University Rudki, and the Consortium of Mathematics, as the Co-Chair, and presented a talk on "Role of Embedded Devices in Industry 4.0"; 19<sup>th</sup> Feb 2021
- "Atomic Energy for Serving the Nation", A one day seminar and exhibition by Bhabha Atomic Research Centre, at Shree Atmanand Saraswati Institute of Technology, Surat, 2016
- "Recent Advances in Civil Engineering for Sustainable Development", at Shree Atmanand Saraswati Institute of Technology, Surat (GUJCOST Sponsored conference), 2016
- International Conference on "Industrial Applications of Signal Processing", ICIASP2013, at DACOE Karad, held on 25<sup>th</sup> to 27<sup>th</sup> Nov 2013
- "Atomic Energy for Peace, Power and Prosperity", Seminar and Exhibition of Bhabha Atomic Research Centre, Mumbai", on 22<sup>nd</sup> December 2017 at SEC Someshwarnagar. For Students faculty and farmers
- National Conference on Signal Processing Communication and Control (SPCCN-2005), at Vishwakarma Institute of Technology, Pune, July 2005



### Core Areas of Expertise:

- Magnetic Resonance Imaging (MRI), Functional MRI, Cardiac MRI-with Research and Industry Contribution.
- Instrumentation, Process Control & Automation, Measurements and Signal Processing, Microcontrollers, Industry 4.0.
- Administrative/Managerial and Academic Expertise at the level of Principal of Engineering Colleges, as the Director of Centre for Industrial Mathematics and as the Sr. Manager for the Project.

**Applied Areas and Industry Verticals:** Manufacturing, Chemical and Process Industries, Healthcare Industries, Automation Industries.

**Contribution for Industry Technology Training and Projects:** Conducted customized in house training courses for Multinational Companies as well as Public Sector Units. Some of these courses were through IIT Bombay CEP Cell. Industries and organizations benefited are Nuclear Power Corporation, Forbes Marshall, Bharat Electronics, Bharat Oman Refineries, Eaton, ABB Bangalore, IPCL (Reliance Now) Nagothane, Suzlon, L&T, and John Deere Pune and at Dubai for oil and Gas industry participants, PIGGIO Baramati, Jubilant Life Sciences Nira, and Philips Healthcare.

- Completed Industry Project for Forbes Marshall Pune on Data Analytics for Boilers, as a part of work done in the Centre for Industrial Mathematics, Bhaskaracharya Pratishthana, Pune. This was done through Purchase order. A team of research scholars from SPPU Mathematics Department along with faculty members worked for this project.
  - This is a novel Big Data Analytics, wherein we analyzed the big data from Industrial Steam Boiler, in order to know the Boiler efficiency, as well as sensor failure from the big data.
  - A thermodynamic model for calculating the pump flow rate using the pressure and temperature measurements at inlet and discharge side of a pump was evaluated. This was tested at the water pumping station at Pune.
- Guidance and overall coordination of Forbes Marshall Valve Positioner- Design and Development Project. This project involved use of MSP-430 microcontroller based software design and development for a valve positioner. The key contribution was to overcome the problem of hysteresis nonlinearity.
- RF Coils- for MRI-End to End Solutions, Guidance, Training, Capacity and Capability Development, Facility Development- for Philips Chakan
- SMART CITY Project at Solapur- Since 29<sup>th</sup> May 2023 till August 2023, working on the SMART City, SCADA implementation project for the PAN city of Solapur as the Sr. Project Manager, IIT Bombay. IIT Bombay bring the Project Management and Consultant for this project, appointed me as the Sr. Project Manager at Solapur. The project is for Solapur Municipal Corporation and Solapur City Development Corporation (SCDCL)

**Special Training Courses Organized and worked as the Resource person, in IIT Bombay on Magnetic Resonance Imaging for Medical and Engineering participants**

<b>Year and Duration</b>	<b>Venue</b>	<b>Lecture Sessions Conducted</b>	<b>Participants</b>
2016	IIT Bombay	Functional MRI	Radiologists/Technicians /Biomedical Engineers/Researchers
2015	IIT Bombay	MR Signal Generation, Advanced MR Physics	Radiologists/Technicians /Biomedical Engineers/Researchers
2014 (2 Days)	Nanavati Hospital Mumbai	MR Imaging: Signal Generation, Reconstruction & Post processing	Radiologists/Technicians /Biomedical Engineers/Researchers
2013 (2Days)	Nanavati Hospital Mumbai	MR Imaging: Signal Generation, Reconstruction & Post processing	Radiologists/Technicians /Biomedical Engineers/Researchers
2012 (2 Days)	Nanavati Hospital Mumbai	MR Imaging: Signal Generation, Reconstruction & Post processing	Radiologists/Technicians /Biomedical Engineers/Researchers
2011 (2 Days)	IIT Bombay	MR Imaging: Signal Generation, Reconstruction & Post processing	Radiologists/Technicians /Biomedical Engineers/Researchers
2010, (5 days)	IIT Bombay	MR Imaging: Signal Generation, Reconstruction & Post processing	Radiologists/Technicians /Biomedical Engineers/Researchers



## Academic and Other Positions: (From 1989 to 2023)

Designation	Name of the Organization/In case of non Govt. PI Specify	Basic Pay (Pay in Pay Band+Grade Pay) Pay Band/ if any other scale please specify	Nature of Appointment Regular/Permanent/Temp/On Contract/ADHOC	From	To	Period
Director, Centre for Industrial Mathematics	Bhaskaracharya Pratishthana, Pune	Honorarium 25,000/- pm and 50 % of profits earned	Contract Basis	1 <sup>st</sup> March 2021	On going	
Sr. Project Manager	IIT Bombay	Consolidated 85,000/-	Contract and Temporary	29 May 2023	23 August 2023	Three Months
Consultant	Philips India Ltd, Pune	[Total Contract amount 10,50,000/-]	The work is over on 31 <sup>st</sup> July 2022	23-3-2022	31-07-2022	4 Months and 9 Days
Principal	College of Engineering Phaltan	1.25 L per month gross	Temp/ADHOC	15-05-2020	05-02-2021	8 months 21 days
Principal	Someshwar Engineering College, Someshwarnagar, Maharashtra	67,000/- Basic + 10,000/- AGP	Regular	13-09-2017	31-01-2019	1 year, 4 months, 18 days
Principal	Bajaj Institute of Technology Wardha	67,000/- Basic + 10,000/- AGP	Temp/on Probation	27-12-2016	23-08-2017	7 months, 27 days
Principal	Shree Swami Atmanand Saraswati Institute of Technology, Surat, Gujarat	67,000/- Basic + 10,000/- AGP	Regular	1-12-2015	24-12-2016	1 year 23 days
Principal	Indira College of Engineering and Management Pune	67,000/- Basic + 10,000/- AGP	Temp/ADHOC	25-6-2015	30-09-2015	3 months 5 days
Principal	Dr. Daulatrao Aher College of Engineering Karad	67,000/- Basic + 10,000/- AGP	Regular Permanent (University Approved)	2-1-2010	24-6-2015	5 years, 5 months, 22 days
Professor (Instrumentation and Control ) *	Cummins College of Engineering for Women, Pune	Basic Pay 16,400/-	Regular (University Approved)	1-3-2008	18-12-2009	1 year 9 months
Principal	Saraswati College of Engineering Kharghar, Navi Mumbai	Basic Pay 22,400/-	Temp/ADHOC	20-7-2007	20-2-2008	6 months 30 days
Professor (Instrumentation Engineering) **	Vishwarkarma Institute of Technology Pune	Basic Pay 16,400/-	Regular (University Approved)	25-7-2006	20-7-2007	11 months 25 days
Asst. Professor (Instrumentation Engineering)	Vishwarkarma Institute of Technology Pune	Basic Pay 3825/-	Regular (University Approved)	1-9-1998	24-7-2006	7 years 10 months 23 days
Lecturer (Instrumentation Engineering)	Vishwarkarma Institute of Technology Pune	Basic Pay 2,425/-	Regular (University Approved)	6-1-1996	30-8-1998	2 years 7 months, 24 days
Lecturer (Instrumentation Engineering)	Pravara Rural Engineering College, Loni	Basic Pay 700/-	Regular (University Approved, yearly approval)	3-10-1989	5-1-1996	6 years, 3 months, 2 days

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### Some of the Training Courses Attended

Name of the Course	Place	Duration	Sponsoring Agency
LASER Technology and Applications	Institute of Armament Technology, Pune (Now Defense Institute of Armament Technology (DIAT))	2 Weeks	DRDO
Digital Signal Processing	SGGSCE&T Nanded	2 Weeks	AICTE, ISTE
Steam Engineering and Energy Conservation	Forbes Marshall Pune	1 week	Forbes Marshall Pune
DCS Automation LCN/UCN implementation	Honeywell Automation (JRD Tata Automation Training Centre PUNE)	2 Weeks	Tata-Honeywell Pune
International Workshop on Biomedical MR	All India Institute of Medical Sciences, AIIMS New Delhi	1 Week	AIIMS New Delhi

- [2] Ajay V. Deshmukh, Vivek Shivhare, Randhir singh Parihar, Vikram M. Gadre, Deepak P. Patkar, Smruti Shah, Sona Pungavkar, " Periodicity Analysis of fMRI Data in the Wavelet Domain", In Proceedings of National Conference on Communications, (NCC 2005), IIT Kharagpur, January 2005.
- [3] Ajay V. Deshmukh, Vivek Shivhare, Randhirsingh Parihar, Vikram M. Gadre, Deepak P. Patkar, Smruti Shah, Sona Pungavkar, "A Phase Based Method for Investigating the functional Connectivity in the fMRI data", In proceedings of IEEE INDICON 2004, IIT Kharagpur, 2004, pp. 272-278 [Available on IEEE Xplore]
- [4] Ajay V. Deshmukh, Vivek Shivhare, Randhirsingh Parihar, Vikram M. Gadre, Tanish Zavheri, Deepak P. Patkar, Smruti Shah, Sona Pungavkar, " A Wavelet Based Method for Identification of Tags from SPAMM cardiac MR Images for HARP MRI", In Proceedings of ICMIT 2005, IIT Kharagpur, India, Feb. 28 –March 1, 2005.

### **Membership of Professional Bodies:**

1. IEEE (Instrumentation & Measurement Society)
  2. Society for Industrial and Applied Mathematics (SIAM)
  3. International Society of Automation (ISA)
  4. Indian Nuclear Society (INS),
  5. National Magnetic Resonance Society of India (NMRS),
  6. Instruments Society of India (ISOI)
  7. Biomedical Society of India (BMESI),
  8. Society for Cancer Research and Communication (SCRACI),
  9. Indian Society for Technical Education (ISTE),
  10. Maratha Chamber of Commerce Industry and Agriculture (MCCIA) Pune,
  11. Indian Academy for Industrial and Applicable Mathematics (IAIAM)
  12. The Indian Mathematics Consortium (TIMC), India
- Worked as the Secretary of International Society of Automation (ISA) Pune Section
  - Worked as the Chair of IEEE Signal Processing Chapter, IEEE Bombay Section.



## Training courses Conducted for faculty and student development

### 2023

- A Two-day workshop on “Paradigm Shift in Education & Industry 4.0”, at Watchband Institute of Technology, Solapur, 17 & 18<sup>th</sup> July 2023.
- A One-day FDP on “SMART Experimentation Workshop”, for Faculty members, organized by the centre for industrial mathematics, Bhaskaracharya Pratishthana, Pune, 1<sup>st</sup> July 2023

### 2022

- A Two-day workshop on Ideas, and Innovations Workshop for Students, organized by SGG SIT, Nanded, 6<sup>th</sup> & 7<sup>th</sup> May 2022
- A session on Digital Farming and Industry 4.0, and interactive discussions, at NAHEP, VNM Krishi Vidyapeeth, Parbhani, 19<sup>th</sup> April 2022
- Interactive session with students of Instrumentation Engineering, at SGG SCE&T Nanded, 25 March 2022

### 2021

- Lecture session on Industry 4.0 for ARAI Engineers, in ARAI campus Pune 23 Dec 2021 (2 to 3 PM)
- National Level webinar on “Opportunities in Research and Industry”, organized by SST college of Arts & Commerce, Ulhasnagar, for faculty and students 23 Dec 2021 (11 to 12 PM)
- Mentoring Sessions and SWOT Analysis of Students in JSPM college Hadapsar, Pune 29,30 Dec 2021
- ON line sessions for multiple colleges for students on “Industry 4.0 & Opportunities for Engineers”, 10<sup>th</sup> July 2021, Organized by Pravara Rural Engineering College, Loni, and IETE
- Key Note on Industry 4.0 during the International conference “Fourth Industrial Revolution based Technology and Practices-(ICFIRTP), organized by Quantum University, Rudki, 26-27 March 2021

### 2020

Industry 4.0 Sessions for DBATU TEQIP-III

### 2019

- Four 90 min sessions on “Industrial Applications of Mathematics”, on 18<sup>th</sup> and 24<sup>th</sup> November 2019, during a Winter School (equivalent to a refresher course) on Computational Mathematics from 06-11-17 to 26-11-17 organized by Center for Advanced Study, Department of Mathematics, Savitribai Phule Pune University. Sponsored by UGC-Human Resource Development Center.
- Industry 4.0, Data Analysis & Communication Technology for IOTs”, during the STTP on, “Development of Internet of Things”, at Vidya Pratishthan’s Kamal Nayan Bajaj Institute of Technology, Baramati, on 14<sup>th</sup> June 2019
- “IOTs and Data Analytics in Education”, Workshop at Uttarakhand Technical University Deheradun, under TEQIP program of the mentor institute DBATU, Lonere, on 23<sup>rd</sup> and 24<sup>th</sup> May 2019, venue: at Tula’s Institute Deheradun
- A lecture on “Raman Effect”, Fergusson College, Pune 4 April 2019
- “FT-NMR”, during a Five Days National Level Workshop on "Sophisticated analytical instrumentation for advanced research" organized by Central Instrumentation Facility (CIF) in collaboration with Department of Chemistry. from 5th to 9th March, 2019, under the scheme of



Pandit Madan Mohan Malaviya National Mission on Teachers and Teaching (PMMMNTT), Teaching Learning Centre

**2018**

- "PID Controllers Tuning and Optimization "ISA Tech Talk Lecture Session, MCCIA Pune on 28th April 2018, organized by ISA Pune Section
- "Industrial Applications of Mathematics", at Centre for Modeling and Simulation, SPPU, 17<sup>th</sup> Feb 2018
- A lecture session on "Mechatronics and Industry 4.0". during the STTP in Malegaon College of Engineering, 14 June 2018

**2015**

- Special interactive lecture on "Research Projects & Industry" for Govt. College Goa students, April 2015
- Special interaction on importance of mathematics, Don BOSCO college, Goa, April 2015
- Special Lecture on Integral Calculus at Bangalore, Minakshi University, 2015
- Special Lecture on Integral Calculus at Bangalore, CMR College, 2015

**2007**

- Special Lecture on Differential Equations & Modelling, at Bangalore, Reva University
- "DSP Applications in Biomedical Engineering", During the STTP at Pune Vidyarthi Grah's College of Engineering and Technology, Pune, 31<sup>st</sup> May 2007.
- "Industry Institute Interaction", During the Industry Institute Interaction Meet at *Larson and Toubro, Powai*, Mumbai, 10<sup>th</sup> September 2007.
- On the Engineering Education and Industry Needs", Reliance Industries Ltd. Nagothane, Dt. Raigad. 2007

**2006**

- "Mathematical Methods in Magnetic Resonance Spectroscopy", During '*En-Mathematica*', summer school at Singhgad Institute of Technology, Pune, 22 and 23<sup>rd</sup> May 2006
- Magnetic Resonance Imaging" during the STTP on 'Image Processing and Multimedia Systems', 7<sup>th</sup> June to 2<sup>nd</sup> July 2004, at VJTI Mumbai

**2004**

- "Medical Image Analysis", During the STTP "Computer Vision", at Babasaheb Ambedkar Technological University, Lonere, 8 March 2004.
- "Magnetic Resonance Imaging and Spectroscopy", College of Engineering, Pune, 25<sup>th</sup> March 2004.
- "Principles and Applications of Magnetic Resonance Imaging", at IETE Pune, 11<sup>th</sup> June 2004

**2003**

- "Magnetic Resonance Imaging", During the STTP "Biomedical Signal and Image Processing: Bio-Sip-2003", 10-12 March 2003, at Babasaheb Ambedkar Technological University, Lonere
- "Image Processing Methods in Magnetic Resonance Imaging", During '*Image Processing Applications*', summer school at SIT,, Pune, 6<sup>th</sup> June 2003