Shivanagouda Biradar

Personal Data

Place and Date of Birth:	Karnataka, India | 09 November 1990
Address:	Room No. 140, Dept. of Aerospace Engineering, Indian Institute of Science (IISc), Bangalore, India
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Education

July 2016 — M. Tech in Systems and Control,
Indian Institute of Technology (IIT) Roorkee, India,
Thesis: "Novel Model Order Reduction and Controller Design Technique Using Big Bang Big Crunch Optimization Algorithm"
Advisor: Prof. Yogesh Vijay Hote
Gpa: 7.971/10

July 2012 — Undergraduate Degree in Electrical and Electronics Engineering
Visvesvaraya Technological University, Karnataka, India
Thesis: "Low Cost Two Channel PC Based Oscilloscope"
Advisor: Prof. Dakshayani S. J
Gpa: 8.856/10.

Work Experience

July 2017 - Current: Research Associate, Indian Institute of Science (IISc), India
Project: *Development of control algorithm and artificial pancreas system for closed loop blood glucose control of type-1 diabetic patient in India.*
Major contribution to project:
(a) Selection of relevant control oriented type-1 diabetes model.
(b) Extensively involved with team of doctors in forming the test protocol for clinical trials of T1DM subjects.
(c) Critical analysis of real time data collected for healthy and type-1 diabetic subjects.
(d) Outlier detection in obtained raw data
e) Using the population-specific data to develop a suitable mathematical model.
(f) Estimation of physiological parameters of type-1 diabetes model for Indian patients from the raw data obtained from lab.
(g) Batch estimation of physiological parameters for both healthy and type-1 diabetes subjects.
h) Time delay estimation (both online and offline techniques)
i) Kalman filter based state estimation of blood glucose concentration, insulin concentration from noisy glucose monitoring sensor.
j) Presently, working on understanding and implementation of dynamic inversion based model reference adaptive control for glucose control in the T1DM patient.

July 2016 - July 2017 Lecturer Kalinga Institute of Industrial Technology, India
Undergraduate Courses Taught: Control System, Power system Operation and Control and Network Analysis.

July 2015 - July 2016	Teaching Assistant IIT Roorkee, India Providing student support, formative course assessment, and exam marking for undergraduate students. Delivering courses such as: Basic control system, network analysis.
July 2014 - July 2015	Graduate Teaching Assistant IIT Roorkee, India Teaching assistant to graduate students under Dr. Y. V. Hote for advanced model order reduction. • Preparation and design of assignments for teaching session. • Setting and marking assignments.

Scholarships and Awards

2008 Awarded prime minister merit scholarship for undergraduate studies.

2014 Secured all India rank of 487 out of 141799 students in Graduate Aptitude Test in Engineering (GATE).
GATE score: 736/1000.
Percentile: 99.66.

2014 Awarded MHRD (Ministry of Human Resource Development) scholarship for pursuing Master of Technology in Indian Institute of Technology Roorkee.

2015-2016 Class topper in 3rd and 4th semester (Project phase).

2018 Best research award, International diabetes summit-2018

Publications

1) **Shivanagouda Biradar**, Yogesh V. Hote, and Sahaj Saxena."Reduced-order modeling of linear time invariant systems using big bang big crunch optimization and time moment matching method.", Applied Mathematical Modelling, Elsevier, 40.15-16 (2016): 7225-7244.

2) **Shivanagouda Biradar**, Sahaj Saxena, and Yogesh V. Hote. "Simplified model identification of automatic voltage regulator using model-order reduction.", International Conference on Power and Advanced Control Engineering (ICPACE), IEEE, 2015.

3) **Shivanagouda Biradar**, Yogesh Vijay Hote."Accelerated modified big bang big crunch optimization based on evolution of universe.", 11th International Conference on Industrial and Information Systems (ICIIS), IEEE, 2016.

4) A Nath, **Shivanagouda Biradar**, A Balan, R Dey, R Padhi. "Physiological Models and Control for Type 1 Diabetes Mellitus: A Brief Review.", IFAC-Papers On Line, 51(1), 289-294.

Google Scholar link

Relevant coursework (completed)

Engineering mathematics (I-IV)
Advanced control theory
Optimal control,
Nonlinear control,
Advanced Matrix theory and linear algebra,
Convex optimization.
Mathematical methods in control system.
Nonlinear system

Languages

Hindi:	Mother tongue
English:	Fluent (language of education)

Computer Skills

Programming language:	C, C++,
Mathematical packages:	MATLAB, PSPICE, Proteus Professional

References

1. **Dr. Yogesh V. Hote (Supervisor)**
Associate Professor
Department of Electrical Engineering
Indian institute of Technolgy Roorkee
Roorkee, Uttarakhand, India
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2. **Dr. Jitendra R Raol**
Retired Scientist-G, National aerospace laboratories
Emeritus professor, MSRIT
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Ramaiah Institute of Technology
Visvesvaraya Technological University, India
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