

Amol Kerba Yerudkar

Curriculum Vitae

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Career Objective

To build a successful academic career with a strong research and innovation background.

Education

- 2016–2021 **Ph.D. (Research Doctorate)**, *University of Sannio*, Benevento 82100, Italy.
Thesis: On Feedback Stabilization of Switched Boolean Control Networks.
Supervisor: Dr Carmen Del Vecchio, *Assistant Professor, Department of Engineering*, University of Sannio.
- 2010–2012 **Master of Technology in Electrical Engineering (Specialization: Control Systems)**, *Veer-mata Jijabai Technological Institute (VJTI)*, Matunga, Mumbai, India 400019.
Thesis: Quantum Mechanics Approach for Protein Structure Analysis.
Supervisor: Dr Navdeep Singh, *Professor, Department of Electrical Engineering*, VJTI.
- 2005–2009 **Bachelor of Engineering (Electronics Engineering)**, *Ramrao Adik Institute of Technology*, Nerul, Navi Mumbai, India 400706.

Experience

Research Experience

- Jan 2021 – Present **Post-doc Researcher**.
Department of Engineering, University of Sannio, Benevento 82100, Italy.
Supervisor: Dr Carmen Del Vecchio, *Assistant Professor, Department of Engineering*, University of Sannio.
- Jan 2020 – Dec 2020 **Research Scholar**.
Department of Engineering, University of Sannio, Benevento 82100, Italy.
Supervisor: Dr Carmen Del Vecchio, *Assistant Professor, Department of Engineering*, University of Sannio.
- Jan 2019 – Dec 2019 **Borsa di Studio**.
Department of Engineering, University of Sannio, Benevento 82100, Italy.
Supervisor: Dr Carmen Del Vecchio, *Assistant Professor, Department of Engineering*, University of Sannio.

Teaching Experience

- Jul 2015 – Dec 2015 **Assistant professor**, Electronics Engineering Department, Ramrao Adik Institute of Technology (RAIT), Navi Mumbai, India 400706.
- Aug 2012 – Jun 2015 **Full time ad-hoc lecturer**, Electrical Engineering Department, Veermata Jijabai Technological Institute (VJTI), Matunga, Mumbai, India 400019.

Research Interests

Modeling and Control of Logical Dynamical Systems
Learning for Dynamics and Control, Reinforcement Learning
Systems Biology
Plant Modeling and Precision Agriculture

Publications

Journal Articles

- 2021 Sonam Kharade, Sarang Sutavani, Sushama Wagh, **Yerudkar, Amol**, Carmen Del Vecchio, and Navdeep Singh. Optimal control of probabilistic Boolean control networks: A scalable infinite horizon approach. *International Journal of Robust and Nonlinear Control*. [Major Revision], 2021.
- 2021 Antonio Acernese, **Yerudkar, Amol**, Luigi Glielmo, and Carmen Del Vecchio. Model-free self-triggered control co-design for probabilistic Boolean control networks. *IEEE Control Systems Letters*, volume 5, pages 1639–1644. IEEE, 2021.
- 2020 **Yerudkar, Amol**, Carmen Del Vecchio, and Luigi Glielmo. Feedback stabilization control design for switched Boolean control networks. *Automatica*, volume 116. Elsevier, Art. no. 108934, 2020.
- 2020 Kisan Sarda, **Yerudkar, Amol**, and Carmen Del Vecchio. Disturbance decoupling control design for Boolean control networks: a Boolean algebra approach. *IET Control Theory & Applications*, volume 14, pages 2339–2347. IET, 2020.
- 2020 Antonio Acernese, **Yerudkar, Amol**, Luigi Glielmo, and Carmen Del Vecchio. Reinforcement learning approach to feedback stabilization problem of probabilistic Boolean control networks. *IEEE Control Systems Letters*, volume 5, pages 337–342. IEEE, 2020.
- 2020 Antonio Acernese, **Yerudkar, Amol**, Luigi Glielmo, and Carmen Del Vecchio. Double deep-q learning-based output tracking of probabilistic Boolean control networks. *IEEE Access*, volume 8, pages 199254–199265. IEEE, 2020.
- 2019 **Yerudkar, Amol**, Carmen Del Vecchio, and Luigi Glielmo. Output tracking control design of switched Boolean control networks. *IEEE Control Systems Letters*, volume 4, pages 355–360. IEEE, 2019.
- 2019 Advait Subramanian, Anita Capalbo, Namrata Ravi Iyengar, Riccardo Rizzo, Antonella di Campli, Rosaria Di Martino, Matteo Lo Monte, Andrea R Beccari, **Yerudkar, Amol**, Carmen Del Vecchio, et al. Auto-regulation of secretory flux by sensing and responding to the folded cargo protein load in the endoplasmic reticulum. *Cell*, volume 176, pages 1461–1476. Elsevier, 2019.

Conference Proceedings

- 2021 Kisan Sarda, **Yerudkar, Amol**, and Carmen Del Vecchio. Missing data imputation for real time-series data in a steel industry using generative adversarial networks. In *47th Annual Conference of the IEEE Industrial Electronics Society (IECON)*, page [Accepted]. IEEE, 2021.
- 2021 Pratik Bajaria, **Yerudkar, Amol**, and Carmen Del Vecchio. Random forest q-learning for feedback stabilization of probabilistic Boolean control networks. In *Systems, Man, and Cybernetics (SMC)*, page [Accepted]. IEEE, 2021.
- 2021 Pratik Bajaria, **Yerudkar, Amol**, and Carmen Del Vecchio. Aperiodic sampled-data stabilization of probabilistic Boolean control networks: Deep q-learning approach with relaxed Bellman operator. In *European Control Conference (ECC)*, pages 836–841. IEEE, 2021.
- 2020 **Yerudkar, Amol**, Carmen Del Vecchio, and Luigi Glielmo. Sampled-data set stabilization of switched Boolean control networks. *IFAC-PapersOnLine*, volume 53, pages 6139–6144. Elsevier, 2020.

- 2019 **Yerudkar, Amol**, Carmen Del Vecchio, and Luigi Glielmo. Output tracking control of probabilistic Boolean control networks. In *2019 IEEE International Conference on Systems, Man and Cybernetics (SMC)*, pages 2109–2114. IEEE, 2019.
- 2019 **Yerudkar, Amol**, Carmen Del Vecchio, and Luigi Glielmo. Control of switched Boolean control networks by state feedback. In *2019 18th European Control Conference (ECC)*, pages 1999–2004. IEEE, 2019.
- 2019 K Sarda, **Yerudkar, Amol**, Carmen Del Vecchio, Luigi Glielmo, and N Singh. Subspace and coordinate transformation for Boolean control networks using binary logic. In *2019 27th Mediterranean Conference on Control and Automation (MED)*, pages 328–333. IEEE, 2019.
- 2019 Amit Joshi, **Yerudkar, Amol**, Carmen Del Vecchio, and Luigi Glielmo. Storage constrained smart meter sensing using semi-tensor product. In *2019 IEEE International Conference on Systems, Man and Cybernetics (SMC)*, pages 51–56. IEEE, 2019.
- 2018 **Yerudkar, Amol**, Carmen Del Vecchio, Navdeep Singh, and Luigi Glielmo. Reachability and controllability of delayed switched Boolean control networks. In *2018 European Control Conference (ECC)*, pages 1863–1868. IEEE, 2018.
- 2018 S Sutavani, K Sarda, **Yerudkar, A**, and N Singh. Interpretation of complex reaction networks in Boolean network framework. In *2018 Indian Control Conference (ICC)*, pages 7–11. IEEE, 2018.
- 2015 P Dey, Madhavi Parimi, **Yerudkar, A**, and SR Wagh. Real-time estimation of propagation of cascade failure using branching process. In *2015 IEEE 5th International Conference on Power Engineering, Energy and Electrical Drives (POWERENG)*, pages 629–634. IEEE, 2015.
- 2014 Pratik Bajaria, Abhishek Pandey, **Yerudkar, Amol**, Faruk Kazi, and Navdeep M Singh. Lmi based loop shaping control of biological circuits. In *22nd Mediterranean Conference on Control and Automation*, pages 1267–1272. IEEE, 2014.

Academic Achievements & Recognition

- 2021 **Invited talk** on "Reinforcement Learning for Control of Probabilistic Boolean Control Networks" at *College of Mathematics and Computer Science, Zhejiang Normal University, China*, 20 July 2021.
- 2021 **Co-organizer** of a full-day pre-conference workshop "Modeling and Control of Boolean Dynamical Systems" in *2021 IEEE European Control Conference (ECC 2021)*, 29 June 2021, Virtual Conference.
- 2021 **Speaker** at a pre-conference workshop "Modeling and Control of Boolean Dynamical Systems" in *2021 IEEE European Control Conference (ECC 2021)*, 29 June 2021, Virtual Conference.
- 2019 **Session Co-chair** of the session "Model-Based Systems Engineering and Discrete Event Systems" in *2019 IEEE International Conference on Systems, Man and Cybernetics (SMC 2019)*, 8 October 2019, Bari, Italy.

Computer skills

Programming	Python, C, C++	System	Windows, Linux, MacOS
Design Tool	MATLAB, Simulink, Mathematica	Software	LaTex, Microsoft Office, Visio, Copasi
Real Time Simulator	OPAL RT OP4500		

Professional Membership and Service

- Member IEEE Control System Society (CSS), Italy Section
- Reviewer IEEE Transaction on Automatic Control, IEEE Control System Society Letters, Automatica, Journal of the Franklin Institute, Systems and Control Letters, and IEEE ACCESS.

Referees

Carmen Del Vecchio

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Luigi Glielmo

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Navdeep Singh

Professor, Department of Electrical Engineering
Veermata Jijabai Technological Institute, Mumbai, India
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Declaration

Il sottoscritto Amol Kerba Yerudkar, consapevole che le dichiarazioni false comportano l'applicazione delle sanzioni penali previste dall'art. 76 del D.P.R. 445/2000, dichiara che le informazioni riportate nel seguente curriculum vitae et studiorum, redatto in formato europeo, corrispondono a verità.



Amol Kerba Yerudkar