

# Debarshi Patanjali Ghoshal | CV

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## Education

- McGill University** **Montreal, Canada**  
*Doctor of Philosophy in Electrical Engineering* 2014 – Present  
Received the Lorne Trottier Engineering Graduate Fellowship, the Geoff Hyland Fellowship in Engineering, and the Graduate Excellence Fellowship.  
Thesis: Dead-beat estimators for dynamical systems with invariance  
Supervisor: Prof. Hannah Michalska
- Indian Institute of Technology Kanpur** **Kanpur, India**  
*Master of Technology in Electrical Engineering* 2012 – 2014  
Received the MHRD (Ministry of Human Resource Development, Govt. of India) Scholarship.  
Thesis: Robot learning from a human expert through modified kinesthetic teaching  
Supervisor: Prof. Laxmidhar Behera
- Jadavpur University** **Kolkata, India**  
*Bachelor of Electrical Engineering* 2007 – 2011  
Elective: Control Systems Engineering

## Experience

- Research**.....
- Aerial Technologies** **Montreal, Canada**  
*Research Internship* October 2018 – Present  
Applying Feature Engineering in Artificial Intelligence/Machine Learning to solve practical problems.  
NSERC Engage Fellowship
- Jadavpur University** **Kolkata, India**  
*Research Project* 2011 – 2012  
Project title: Robust controller design for boiler burning process using RBode plot  
Supervisor: Prof. Smita Sadhu (Department of Electrical Engineering, Jadavpur University)  
The work was published in an international journal.
- Indian Institute of Science, Bangalore** **Bangalore, India**  
*Summer Internship* 2010  
Project title: Waypoint navigation system for unmanned aerial vehicles (UAV)  
Supervisor: Prof. Seetharama M. Bhat (Department of Aerospace Engineering, IISc.)
- Jadavpur University** **Kolkata, India**  
*Research Project* 2009 – 2010  
Project title: Neural network approach for automatic number plate recognition (ANPR)  
Supervisor: Prof. Anjan Rakshit (Department of Electrical Engineering, Jadavpur University)  
The work resulted in a peer-reviewed conference paper, which also won the best-paper prize of the conference.

## Teaching.....

**McGill University** **Montreal, Canada**  
*Graduate Teaching Assistant, Electrical and Computer Engineering Department* 2017 – Present  
ECSE 404 Control Systems (Fall 2018, Fall 2017)

**Indian Institute of Technology Kanpur** **Kanpur, India**  
*Teaching Assistant, Electrical Engineering Department* 2012 – 2014  
Control System Analysis (Spring 2014, Spring 2013)  
Basics of Modern Control Systems (Fall 2013)  
Intelligent Informatics Lab (Fall 2012)

## Miscellaneous.....

**McGill University** **Montreal, Canada**  
*Grader, Electrical and Computer Engineering Department* 2016 – Present  
ECSE 500 Mathematical Foundations of Systems (Fall 2018)  
ECSE 443 Introduction to Numerical Methods in Electrical Engineering (Winter 2017)  
ECSE 404 Control Systems (Fall 2016)

**McGill University** **Montreal, Canada**  
*Invigilator, Office for Students with Disabilities* 2015 – 2016

**PricewaterhouseCoopers India** **Kolkata, India**  
*Consultant* July 2011 – September 2011

## Publications

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- [1] D. P. Ghoshal and H. Michalska, "Finite-interval kernel-based identification and state estimation for LTI systems with noisy output data," in *2019 Annual American Control Conference (submitted)*.
- [2] D. P. Ghoshal, S. Sinha, and H. Michalska, "Algebraic nonlinear identification and output tracking control of synchronous generator using differential flatness," in *2019 Annual American Control Conference (submitted)*.
- [3] D. P. Ghoshal, N. S. Kale, and H. Michalska, "Model-free control of a double inverted pendulum on a cart," in *2019 Annual American Control Conference (submitted)*.
- [4] A. Pandey, D. P. Ghoshal, and H. Michalska, "Variational approach to joint linear model and state estimation," in *2018 Annual American Control Conference (ACC)*, pp. 3520–3525, IEEE, 2018.
- [5] D. Sridhar, D. P. Ghoshal, and H. Michalska, "B-splines in joint parameter and state estimation in linear time-varying systems," in *2018 Annual American Control Conference (ACC)*, pp. 3508–3513, IEEE, 2018.
- [6] D. P. Ghoshal, K. Gopalakrishnan, and H. Michalska, "Kernel-based adaptive multiple model target tracking," in *Control Technology and Applications (CCTA), 2017 IEEE Conference on*, pp. 1338–1343, IEEE, 2017.
- [7] D. P. Ghoshal and H. Michalska, "Double-sided kernel observer for linear time-varying systems," in *Control Technology and Applications (CCTA), 2017 IEEE Conference on*, pp. 922–927, IEEE, 2017.

- [8] D. P. Ghoshal, K. Gopalakrishnan, and H. Michalska, "Algebraic parameter estimation using kernel representation of linear systems," *IFAC-PapersOnLine*, vol. 50, no. 1, pp. 12898–12904, 2017.
- [9] D. P. Ghoshal, K. Gopalakrishnan, and H. Michalska, "Using invariance to extract signal from noise," in *American Control Conference (ACC), 2017*, pp. 2588–2593, IEEE, 2017.
- [10] D. P. Ghoshal, N. Das, S. Dutta, and L. Behera, "Robot learns from human teacher through modified kinesthetic teaching," *IFAC Proceedings Volumes*, vol. 47, no. 1, pp. 773–780, 2014.
- [11] D. P. Ghoshal and S. D. Gupta, "Robust controller design for boiler burning process using RBode plot," *International Journal of Electrical, Electronics and Computer Engineering*, vol. 1, no. 2, pp. 11–14, 2012.
- [12] A. Roy and D. P. Ghoshal, "Number plate recognition for use in different countries using an improved segmentation," in *Emerging Trends and Applications in Computer Science (NCETACS), 2011 2nd National Conference on*, pp. 1–5, IEEE, 2011.

## Languages

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**English:** Fluent

**Bengali:** Native

**Hindi:** Fluent

**French:** Basic

## Computer skills

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**Programming:** Python, MATLAB, C, Fortran

**Publishing:** LaTeX

**Library:** Scikit-learn, Pandas, NumPy, Matplotlib

**Miscellaneous:** Git, Linux

## Volunteer work

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**American Control Conference**

*Reviewer*

2019

**Computer Science and Electronic Engineering Conference**

*Reviewer*

2018, 2015

**International conference on Advances in Control and Optimization of Dynamic Systems**

*Reviewer*

2014

**McGill University - Electrical Engineering Graduate Student Society (EEGSS)**

*Vice-President, Facility*

2016 – 2017

**McGill University - International Student Services**

*International Student Buddy Program Volunteer*

2015–2017