

Debarshi Patanjali Ghoshal | CV

✉ debarshi.ghoshal@mail.mcgill.ca • 🌐 dpghoshal.com • in dpghoshal

Education

McGill University

Doctor of Philosophy in Electrical Engineering

Thesis: Estimator design for dynamical systems with invariance

Supervisor: Prof. Hannah Michalska

Montreal, Canada

2014 – Present

Indian Institute of Technology Kanpur

Master of Technology in Electrical Engineering

Thesis: Robot learning from a human expert through modified kinesthetic teaching

Supervisor: Prof. Laxmidhar Behera

Kanpur, India

2012 – 2014

Jadavpur University

Bachelor of Electrical Engineering

Elective: Control Systems Engineering

Kolkata, India

2007 – 2011

Experience

Research

Aerial Technologies

Research Internship

Applying Feature Engineering in Artificial Intelligence/Machine Learning to solve practical problems.

Montreal, Canada

Oct 2018 – Present

Jadavpur University

Research Project

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.

Kolkata, India

Oct 2011 – May 2012

Indian Institute of Science, Bangalore

Summer Internship

Project title: Waypoint navigation system for unmanned aerial vehicles (UAV)

Supervisor: Prof. Seetharama M. Bhat (Department of Aerospace Engineering, IISc.)

Bangalore, India

May 2010 – Jun 2010

Jadavpur University

Research Project

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.

Kolkata, India

May 2009 – Apr 2010

Teaching

McGill University

Graduate Teaching Assistant, Electrical & Computer Engineering Dept.

ECSE 404 Control Systems (Fall 2018, Fall 2017)

Montreal, Canada

Sep 2017 – Dec 2018

Indian Institute of Technology Kanpur

Teaching Assistant, Electrical Engineering Department
Control System Analysis (Spring 2014, Spring 2013)
Basics of Modern Control Systems (Fall 2013)
Intelligent Informatics Lab (Fall 2012)

Kanpur, India*Aug 2012 – Apr 2014***Miscellaneous**.....**McGill University**

Grader, Electrical and Computer Engineering Department
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)

Montreal, Canada*Sep 2016 – Dec 2018***McGill University**

Exam Delivery Person, Office for Students with Disabilities

Montreal, Canada*Dec 2016 – Mar 2018***McGill University**

Invigilator, Office for Students with Disabilities

Montreal, Canada*Nov 2015 – Dec 2016***Honours & Awards**

NSERC Engage Plus Fellowship

Natural Sciences and Engineering Research Council of Canada

*2019 – 2020***NSERC Engage Fellowship**

Natural Sciences and Engineering Research Council of Canada

*2018 – 2019***Lorne Trottier Engineering Graduate Fellowship**

McGill University - Faculty of Engineering

*2014 – 2017***Geoff Hyland Fellowship in Engineering**

McGill University - Faculty of Engineering

*2014 – 2017***Graduate Excellence Fellowship - Engineering**

McGill University - Faculty of Engineering

*2014 – 2017***MHRD Scholarship**

Ministry of Human Resource Development, Govt. of India

*2012 – 2014***Publications**

D. P. Ghoshal and H. Michalska, "Finite interval estimation of LTI systems using differential invariance, instrumental variables, and covariance weighting," in *2020 Annual American Control Conference (accepted)*.

D. P. Ghoshal and H. Michalska, "Finite-interval kernel-based identification and state estimation for LTI systems with noisy output data," in *2019 American Control Conference (ACC)*, pp. 4982–4989, IEEE, 2019.

D. P. Ghoshal, S. Sinha, and H. Michalska, "Algebraic nonlinear identification and output tracking control of synchronous generator using differential flatness," in *2019 23rd International Conference on System Theory, Control and Computing (ICSTCC)*, pp. 206–211, IEEE, 2019.

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.

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.

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.

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.

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.

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.

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.

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.

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.

Computer skills

Programming: Python, MATLAB, C, Fortran

Publishing: LaTeX

Library: Scikit-learn, NumPy, SciPy, Matplotlib

Miscellaneous: Git, Linux

Volunteer work

Reviewer:

American Control Conference (2019)

Computer Science and Electronic Engineering Conference (2018, 2015)

International conference on Advances in Control and Optimization of Dynamic Systems (2014)

Elected position: Vice-President of Facilities

McGill University - Electrical Engineering Graduate Student Society (EEGSS)

2016 – 2017

International Student Buddy

McGill University - International Student Services

2015 – 2017