

Debarshi Patanjali Ghoshal | CV

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Education

McGill University <i>Doctor of Philosophy in Electrical & Computer Engineering</i> Thesis: Finite-interval estimation using double-sided kernels and differential invariants Supervisor: Prof. Hannah Michalska	Montreal, Canada 2014 – 2021
Indian Institute of Technology Kanpur <i>Master of Technology in Electrical Engineering</i> Thesis: Robot learning from a human expert through modified kinesthetic teaching Supervisor: Prof. Laxmidhar Behera	Kanpur, India 2012 – 2014
Jadavpur University <i>Bachelor of Electrical Engineering</i> Elective: Control Systems Engineering	Kolkata, India 2007 – 2011

Experience

Research	
Aerial Technologies <i>Industrial R&D</i> Applying Feature Engineering in Artificial Intelligence/Machine Learning to solve practical problems in the field of WiFi Motion Analytics; the project started as a Research Internship, which was later extended into a paid position as an independent Research Scientist Consultant.	Montreal, Canada Oct 2018 – Sept 2020
Jadavpur University <i>Research Project</i> Project title: Robust controller design for boiler burning process using RBode plot Supervisor: Prof. Smita Sadhu (Department of Electrical Engineering, Jadavpur University) The work resulted in a peer-reviewed conference paper.	Kolkata, India Oct 2011 – May 2012
Indian Institute of Science, Bangalore <i>Summer Internship</i> 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 <i>Research Project</i> 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

Montreal, Canada

Graduate Teaching Assistant, Electrical & Computer Engineering Dept.
ECSE 404 Control Systems (Fall 2018, Fall 2017)

Sep 2017 – Dec 2018

Indian Institute of Technology Kanpur

Kanpur, India

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

Aug 2012 – Apr 2014

Miscellaneous.....

McGill University

Montreal, Canada

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)

Sep 2016 – Dec 2018

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

Selected Publications

D. P. Ghoshal and H. Michalska, "Finite interval estimation of LTI systems using differential invariance, instrumental variables, and covariance weighting," in *2020 American Control Conference (ACC)*, pp. 731–736, IEEE, 2020.

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.
- 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
Libraries: 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