

Pratyush Chakraborty

CONTACT INFORMATION	2000 Walnut Avenue Apt G204 Fremont, CA 94538	716-408-7401 prats19@gmail.com
SKILLS AND INTERESTS	<ul style="list-style-type: none">• Power Systems Economics and Electricity Markets, Renewable Energy Integration, Game Theory, Mechanism Design, Distributed Control, Optimization	
CURRENT APPOINTMENT	University of California , Berkeley, CA Post Doctoral Scholar Berkeley Center for Control and Identification	January 2017-present <ul style="list-style-type: none">• Research Area: <i>Sharing Economy with Photovoltaic Systems and Batteries</i>• Advisors: Dr. Kameshwar Poolla and Dr. Pravin Varaiya
EDUCATION	University of Florida , Gainesville, FL Ph.D., Electrical and Computer Engineering,	2011-2016 <ul style="list-style-type: none">• Dissertation Title: <i>Optimization and Control of Flexible Demand and Renewable Supply in a Smart Power Grid</i>• Advisor: Dr. Pramod P. Khargonekar
	University of Florida , Gainesville, FL M.S., Electrical and Computer Engineering,	2011-2013 <ul style="list-style-type: none">• Depth Area: <i>Signals and Systems</i>
	Indian Institute of Technology, Bombay , Mumbai, Maharashtra, India M.Tech., Electrical Engineering,	2009-2011 <ul style="list-style-type: none">• Specialization: <i>Control and Computing</i>• Thesis Title: <i>Numerical Methods in Optimal Control</i>• Advisor: Dr. Debraj Chakraborty
	Jadavpur University , Kolkata, West Bengal, India B.E. (1st Class Honours), Electrical Engineering,	2002-2006
FULL TIME INDUSTRY EXPERIENCE	Siemens Ltd. , Kolkata, India <ul style="list-style-type: none">• Division: Industrial Solutions and Services• Designation: Senior Executive-Marketing Executive- Marketing Graduate Trainee Engineer• Job profile : Acquisition and Execution of Electrical and Automation Projects in Steel Plants (Rolling Mills, Processing Lines, Blast Furnace etc)• Clients: Tata Steel, Tata Bluescope Steel, Steel Authority of India	2006-2009 Jan 2009-Jul 2009 Jul 2007-Dec 2008 Jul 2006-Jun 2007
TEACHING EXPERIENCE	Teaching Assistant at IIT Bombay <ul style="list-style-type: none">• Control Systems lab (EE324) under Dr. Debraj Chakraborty• Control and Computation lab (EE615) under Dr. Madhu Belur• Control and Communication (EE342) under Dr. Madhu Belur	2009-2011 Spring 2011 Fall 2010 Spring 2010

- Introduction to Electrical Circuits (EE101) under Dr. D. K. Sharma Fall 2009
- Teaching Assistant at the University of Florida** Fall 2012
- State Variable Methods (EEL 5182) under Dr. Kamran Mohseni Fall 2012

RESEARCH
PROJECTS

1. **Demand Response and Consumer Behavior:** Design of price based distributed demand response methods such that efficiency loss due to selfish behavior of consumers can be minimized
2. **Renewable Integration and Cost Allocation Based on Cost Causation:** Aggregation of renewable energy resources bidding in a two-settlement market and allocation of joint deviation cost based on cost causation principle
3. **Sharing Photovoltaic Solar Cells and Batteries:** Design of successful cooperation strategies among agents sharing solar cells and batteries
4. **Incentive Design in a distributed problem with strategic agents:** Design of incentive in a distributed multi-agent system with a central operator where the operator does not have a direct control over the agents , the agents have interdependent utility functions, and the utility function of the operator is not necessarily the sum of the utility function of the agents

JOURNALS

1. P. Chakraborty, E. Baeyens, P. P. Khargonekar, K. Poolla, and P. Varaiya, "Sharing Storage in a Smart Grid: A Coalitional Game Approach", submitted to IEEE Transactions on Smart Grid
2. P. Chakraborty, E. Baeyens , K. Poolla, P. P. Khargonekar, and P. Varaiya " Analysis of Solar Energy Aggregation under Various Billing Mechanisms", submitted to IEEE Transactions on Smart Grid
3. P. Chakraborty, E. Baeyens and P. P. Khargonekar, "Distributed Control of Flexible Demand in a Smart Grid: Game Theoretic Interaction and Price of Anarchy ", (Elsevier) Sustainable Energy, Grids and Networks, vol.12, pp. 30-39, 2017
4. P. Chakraborty, E. Baeyens and P. P. Khargonekar, "Cost Causation Based Allocations of Costs for Market Integration of Renewable Energy," in IEEE Transactions on Power Systems, vol. 33, no. 1, pp. 70-83, Jan. 2018

PEER REVIEWED
CONFERENCE
PUBLICATIONS

1. D. Ghavidel, P. Chakraborty, E. Baeyens, V. Gupta, P.P. Khargonekar " Incentive Design in a Distributed Control Problem with Strategic Agents" accepted for publication in the proceedings of American Control conference, 2018
2. P. Chakraborty, E. Baeyens, K. Poolla and P. P. Khargonekar " A Strategy to Maintain Short-term Stability and Long-term Profitability of Renewable Energy Aggregation", accepted for publication in the proceedings of American Control Conference, 2018
3. P. Chakraborty, E. Baeyens, P. P. Khargonekar and K. Poolla, "A Cooperative Game for the Realized Profit of an Aggregation of Renewable Energy Producers", in the proceedings of 55th IEEE Conference on Decision and Control, Las Vegas, USA, 14-16 Dec. 2016, pp.5805-5812
4. P. Chakraborty and P. P. Khargonekar, "A Demand Response Game and its Robust Price of Anarchy", in the proceedings of IEEE smartgridcomm, Venice, Italy, November, 3-6 November 2014, pp. 644-649
5. P. Chakraborty and P. P. Khargonekar, "Impact of Irrational Consumers on Rational Consumers in a Smart Grid", in the proceedings of American Control Conference, Portland, USA, 4-6 June 2014, pp.58-64

6. P. Chakraborty and P. P. Khargonekar, "Flexible loads and Renewable Integration: Distributed Control and Price of Anarchy", in the Proceedings of the 52nd IEEE Conference on Decision and Control, Firenze, Italy, 10-13 Dec. 2013, pp.2306-2312

BOOK CHAPTERS

1. Chakraborty, Pratyush, Enrique Baeyens, and Pramod P. Khargonekar. "Grid Integration of Renewable Electricity and Distributed Control." In Emerging Applications of Control and Systems Theory, pp. 205-216. Springer, Cham, 2018

POSTER PRESENTATIONS

1. P. Chakraborty and P. P. Khargonekar, "Decentralized Control of Flexible Loads and Robust Price of Anarchy in a Smart Power Grid", UF Control Systems Symposium, Gainesville, Florida on October 23, 2015
2. P. Chakraborty and P. P. Khargonekar, "Harnessing Flexibility of Electric Loads for Renewable Integration", Florida Energy Summit, Orlando, Florida on August 15-17, 2012

TALKS

1. "Demand Side Management: Game Theoretic Interaction and Price of Anarchy", Philippine-California Advanced Research Institutes (PCARI) workshop, Berkeley, CA, February 15, 2017
2. "Coalitional Games and Grid Integration of Renewable Energy ", SIAM Conference on Control and Its Application, David Lawrence Convention Center (DLCC), Pittsburgh, PA, July 10, 2017
3. "Analysis of Solar Energy Aggregation under various Billing Mechanisms", Lightning talk in Societal Networks Workshop, Simons Institute for the Theory of Computing, Berkeley, CA, March 26, 2018

AWARDS AND ACHIEVEMENTS

- 2018 Marquis Who's Who in The World Award July 2017
- University of Florida 'Graduate School Fellowship Award' Fall 2011-Summer 2015
- All India Rank-98 (Percentile-99.54) in Graduate Aptitude Test in Engineering (Electrical Engineering)-a national level entrance examination for graduate study March 2009
- Certificate of Appreciation for excellent performance and noteworthy contribution to the Company's (Siemens) objective Jan 2009
- 'Outstanding Excellence Award' by Siemens for the Graduate Trainee Project titled "Project monitoring-An Excel way" Jul 2007

PROFESSIONAL ACTIVITIES AND SERVICES

- Member: IEEE
- Reviewer:
 - IEEE Transactions on Smart Grid (reviewed 20 papers)
 - IEEE Transactions on Power Systems (reviewed 2 papers)
 - IEEE Conference on Decision and Control (reviewed 3 papers)
 - American Control conference (reviewed 1 paper)
- Poster Competition Judge: Graduate Student Research Day at the University of Florida (2013, 2014, and 2015)
- Co-Chair of two sessions (Smart Grid II, Game theory II) in American Control Conference, 2018

REFERENCES

- Dr. Pramod Khargonekar
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