

Aaron M. Cramer, Associate Professor and Director of Graduate Studies of Electrical and Computer Engineering – University of Kentucky

Professional Preparation

University of Kentucky	Electrical Engineering	B.S. 2003
Purdue University	Electrical Engineering	Ph.D. 2007

Appointments

University of Kentucky	Director of Graduate Studies	2018–present
University of Kentucky	Associate Professor	2016–present
University of Kentucky	Assistant Professor	2010–2016
PC Krause and Associates	Senior Engineer	2007–2010
Purdue University	Research Assistant	2004–2007

Products

1. S. Ibrahim, A. M. Cramer, and Y. Liao, “Integrated control of voltage regulators and distributed generation inverters,” *Electric Power Systems Research*, accepted.
2. Y. Q. Zhang and A. M. Cramer, “Numerical average-value modeling of machine-rectifier systems,” *IEEE Trans. Energy Conversion*, accepted.
3. T. Lim, A. Cramer, S. Rawashdeh, and J. Lumpp, Jr., “A modular electrical power system architecture for small spacecraft,” *IEEE Trans. Aerospace and Electronic Systems*, vol. 54, no. 4, pp. 1832–1849, Aug. 2018.
4. S. Ibrahim, A. M. Cramer, X. Liu, and Y. Liao, “PV inverter reactive power control for chance-constrained distribution system performance optimisation,” *IET Generation, Transmission & Distribution*, vol. 12, no. 5, pp. 1089–1098, Mar. 2018.
5. M. Liu and A. M. Cramer, “Computing budget allocation in multi-objective evolutionary algorithms for stochastic problems,” *Swarm and Evolutionary Computation*, vol. 38, pp. 267–274, Feb. 2018.
6. Y. Q. Zhang and A. M. Cramer, “Numerical average-value modeling of rotating rectifiers in brushless excitation systems,” *IEEE Trans. Energy Conversion*, vol. 32, no. 4, pp. 1592–1601, Dec. 2017.
7. D. C. Cambron and A. M. Cramer, “A lithium-ion battery current estimation technique using an unknown input observer,” *IEEE Trans. Vehicular Technology*, vol. 66, no. 8, pp. 6707–6714, Aug. 2017.
8. X. Liu, A. M. Cramer, and F. Pan, “Generalized average method for time-invariant modeling of inverters,” *IEEE Trans. Circuits and Systems I: Regular Papers*, vol. 64, no. 3, pp. 740–751, Mar. 2017.
9. A. M. Cramer, X. Liu, and M. Liu, “Electric power distribution system optimization in the presence of renewable distributed generation,” *Trans. Techniques in STEM Education*, vol. 2, no. 1, pp. 11–15, Oct.–Dec. 2016.
10. Y. Q. Zhang and A. M. Cramer, “Unified model formulations for synchronous machine model with saturation and arbitrary rotor network representation,” *IEEE Trans. Energy Conversion*, vol. 31, no. 4, pp. 1356–1365, Dec. 2016 (Best Paper 2016-2017).

Synergistic Activities

- Office of Naval Research Young Investigator Program awardee (2015) for project “Market-based control of shipboard integrated engineering plants”
- Faculty associate and member of internal advisory board for the Power and Energy Institute of Kentucky (2010–present), including development of new multidisciplinary course in electric power system fundamentals for both electrical and nonelectrical engineers, and participant in Kentucky National Governors Association Policy Academy on Power Sector Modernization (2017–2018)
- IEEE, Student Member (2002–2004, 2007), Member (2007–2013), Senior Member (2013–present), IEEE Power and Energy Society, (2012–present)
- Editor of *IEEE Trans. Energy Conversion*, treasurer for IEEE Electric Ship Technologies Symp. 2019, technical program co-chair for IEEE Int. Electric Machines and Drives Conf. 2017, and reviewer for numerous journals, conferences, and research sponsors including *IEEE Trans. Energy Conversion* (2006–2018), *Electric Power Systems Research* (2015–2018), *Swarm and Evolutionary Computation* (2015–2018), *Electric Power Components and Systems* (2013–2017), IEEE Energy Conversion Congr. and Expo. (2009–2011, 2014–2018), IEEE PES General Meeting (2016, 2018), IEEE Conf. Decision and Control (2017), North American Power Symp. (2017)
- Outstanding Electrical and Computer Engineering Teacher Award (2014, 2018), Tau Beta Pi Most Outstanding Professor in the College of Engineering Award (2016), average teaching evaluations of 4.81/5 in undergraduate and graduate courses in electric machinery, power electronics, and power systems, supervision and/or mentoring of 26 individual student projects including NSF REU mentor for two undergraduate students on Characterization and Packaging of a Bidirectional DC-DC Converter, and research advisor for 25 graduate students