

RAGA AHMED, PhD

Department of Electrical Engineering, EMCS, Dept. 2502, UTC, Chattanooga, TN 37403, raga-ahmed@utc.edu

Education:

Georgia Institute of Technology, Atlanta, GA
Ph.D. Electrical and Computer Engineering, 2013

Rice University, Houston, TX
MEE Electrical and Computer Engineering, 1993

University of Khartoum, Khartoum, Sudan
B.Sc. Electrical Engineering, 1988

Software and Hardware:

Matlab, Simulink; Opal-RT real-time digital simulator; Texas Instrument microcontrollers with Code Composer Studio; Microsoft Office suite of productivity software.

Teaching Experience:

Assistant Professor, *University of Tennessee-Chattanooga, TN, Electrical Engineering, 8/2013-Present*

- Instructor (undergraduates and graduate courses); Graduate Coordinator, Electrical Engineering.

Instructor, *University of Tennessee-Chattanooga, TN, 1/2012-5/2012*

- Taught Electrical Circuits II and laboratory.

Fellow, Office of Equity and Diversity, *University of Tennessee-Chattanooga, TN, 9/09-12/2011*

- Taught graduate and undergraduate courses in electrical engineering: Electrical Circuits (I and II) and laboratories, Electrical Digital Circuits, Linear Systems

Instructor, Middle School Teacher Training Courses, *Dekalb County School System, Georgia, 4/07-5/07*

- Taught two courses, Transfer of Energy and Electricity and Magnetism. Assigned and graded homework and tests. Provided additional feedback and learning through daily on-line discussion board posting.
- Incorporated Georgia Performance Standards implementation techniques.

STEP Fellow, *Georgia Institute of Technology, Atlanta, Georgia, 5/06-5/07*

- Assisted Algebra I, II teachers conduct their classes at Marietta High School, Marietta, Georgia.
- Conducted after-school tutoring sessions for Algebra I, II students.
- Volunteered extra time (over the phone) for teaching and mentoring struggling students.

Teaching Assistant, *University of Khartoum, Sudan, 1/89-6/91*

- Designed, supervised and graded senior control systems laboratory experiments.
- Conducted problem sessions in digital electronics and control systems.

Professional Experience:

Research Engineer, *Moog Corporation, Marietta, Georgia, 9/01-9/04*

- Conducted motor design optimization through finite element analysis (using MagNet software package) in a joint venture setting involving several innovating companies and partial federal funding (ATP program).
- Prepared and presented project progress in quarterly meetings to project partners.
- Conducted a MagNet training workshop for company employees.

System Analyst, *Operation Simulation Associates, Ringgold, Georgia, 2/94-9/97*

- Designed and implemented a menu-driven data manipulation tool based on MS ACCESS as an interface to a production costing model for electric utilities. Designed and implemented MS ACCESS database tool to load billing data files of different formats, and generate billing reports for a major electric utility.
- Wrote and integrated computational subroutines into existing production costing model.
- Wrote application manuals for user interface and held client training sessions.

Educational Training:

Student and Teacher Enhancement Partnership (STEP) Program, *Center for the Enhancement of Teaching and Learning (CETL), Georgia Institute of Technology, Atlanta, Georgia, summer 2006*

- Received training on learning theories and individual differences in learning; classroom management techniques; lesson planning and delivery techniques; gender equality and inquiry-based pedagogy.
- Participated in workshops and group exercises including hands-on science experiments for the classroom; recorded and peer-critiqued rehearsals and input from the Atlanta area school teachers.
- Received sponsorship to attend the American Society of Engineering Educators, ASEE, Global Colloquium on Engineering Education, Istanbul, Turkey, Fall 2007
 - Actively participated in group discussions on ‘Research into Student Learning’ and ‘The Knowledge Skills and Competencies of the Global Engineer’. Presented group findings to all forum attendees.
 - Attended workshops and presentations by university educators, engineers, and education policy advisors on ‘Advancing Global Engineering Education Research’ including theoretical advances and best practices and a World Bank workshop on helping client countries develop their education systems.

Publications:

- M. A. Saad, A. H. Eltom, G. L. Kobet, R. Ahmed, “Performance Comparison between Dual-Blinder and Phasor-Based Out-of-Step Detection Functions Using Hardware-in-the Loop Simulation,” IEEE Industrial Applications Society July 2015.
- R. Ahmed, D. Taylor, "Targeted-ripple optimal commutation of coupled and uncoupled linear variable reluctance motors," SoutheastCon 2015 , vol., no., pp.1,8, 9-12 April 2015.
- R. Ahmed and D. G. Taylor, “Assessment of linear variable reluctance motor performance limits via finite element modeling,” *Proceedings of the International Conference on Electrical Machines*, Chania, Greece, 6 pages on CD-ROM, September 2006
- R. Ahmed and D. G. Taylor, “Optimal excitation of linear variable reluctance motors with coupled and uncoupled flux paths,” *Proceedings of the IEEE International Symposium on Industrial Electronics*, Montreal, Canada, pp. 2498--2503, July 2006.
- D. G. Taylor and R. Ahmed, “Comparative analysis of linear variable reluctance motors with coupled and uncoupled flux paths,” *Proceedings of the 36th IEEE Southeastern Symposium on System Theory*, Atlanta, GA, pp. 436--440, March 2004.
- D. G. Taylor and R. Ahmed, “Current limited optimal excitation of magnetically coupled linear variable reluctance motors,” *Proceedings of the IEEE International Electric Machines and Drives Conference*, Madison, WI, pp. 857--860, June 2003.
- D. G. Taylor and R. Ahmed, “Modeling linear variable reluctance motors by finite element analysis and least squares methods,” *Proceedings of the IASTED International Conference on Applied Simulation and Modeling*, Crete, Greece, pp. 633--637, June 2002.
- D. G. Taylor and R. Ahmed, “Optimization based design of excitation currents for linear variable reluctance motors,” *Proceedings of the IASTED International Conference on Applied Simulation and Modeling*, Crete, Greece, pp. 627--632, June 2002.
- D. G. Taylor and R. Ahmed, “Force control of a linear variable reluctance motor with magnetically coupled phases,” *Proceedings of the 34th IEEE Southeastern Symposium on System Theory*, Huntsville, AL, pp. 229--233, March 2002.
- D. G. Taylor and R. Ahmed, “Analysis of a linear variable reluctance motor with magnetically coupled phases,” *Proceedings of the 34th IEEE Southeastern Symposium on System Theory*, Huntsville, AL, pp. 219--223, March 2002.

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Awards and Affiliations:

- Electrical Engineering Best Advisor, Academic Year 2014-2015, UTC
- Graduate Research Assistantship, Georgia Tech, 1999
- Fulbright Grant, 1991
- Faculty Prize for best final year project, University of Khartoum, Sudan, 1988
- Institute for Electrical and Electronic Engineers (IEEE), 1994-present