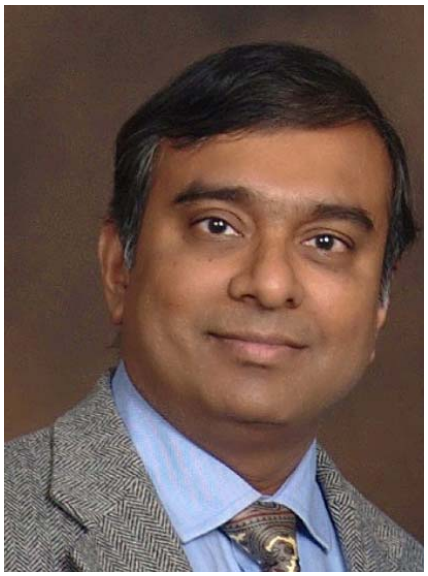
# Krishnendu (Krish) Chakrabarty



**William H. Younger Distinguished Professor of Engineering**
**Department of Electrical and Computer Engineering**
**Professor of Computer Science (Secondary Appointment)**
**Executive Director of Graduate Studies (Electrical and Computer Engineering)**
**Duke University**

## Administrative Support Staff:

Grants and Contracts: Rhonda Adams (radams@duke.edu)
Graduate Program: Amy Kostrewa (amy.kostrewa@duke.edu)
IEEE Transactions on VLSI Systems: Stacey Weber Jackson (tvlsiadm@duke.edu)
Other Matters: Ellen Currin (ecurrin@ee.duke.edu)

## BACKGROUND

Krish Chakrabarty has been at Duke University since 1998. His current research is focused on: testing and design-for-testability of integrated circuits (especially 3D and multicore chips); digital microfluidics, biochips, and cyberphysical systems; optimization of digital print and production system infrastructure. His research projects in the recent past have also included chip cooling using digital microfluidics, wireless sensor networks, and real-time embedded systems. Research support is provided by the National Science Foundation, the Semiconductor Research Corporation, Cisco Systems, HP Labs, Huawei Technologies, and Intel Corporation through Intel Lab's Academic Research Office. Other sponsors in the past have included National Institutes of Health , DARPA and the Office of Naval Research.

Prof. Chakrabarty is a recipient of the 1999 National Science Foundation Early Faculty (CAREER) Award, the 2001 Office of Naval Research Young Investigator Award, the Mercator

Professor award from Deutsche Forschungsgemeinschaft, Germany, for 2000-2002, and best paper awards at IEEE Design Automation and Test in Europe (DATE) Conference (2001), IEEE International Conference on Computer Design (2005), IEEE International Conference on VLSI Design (2007, 2010), IEEE Asian Test Symposium (2012), IEEE VLSI Test Symposium (2013), IEEE European Test Symposium (2013), IEEE Transactions on CAD (2015), ICCAD (2015), and VALID (2016). He is a recipient of Duke University's 2008 Dean's Award for Excellence in Mentoring, and a recipient of the 2010 Capers and Marion McDonald Award for Excellence in Mentoring and Advising, Pratt School of Engineering, Duke University. He was also awarded the Distinguished Alumnus Award by the Indian Institute of Technology, Kharagpur, in 2014. Prof. Chakrabarty is currently serving as an ACM Distinguished Speaker. He served as a Distinguished Visitor of the IEEE Computer Society for 2005-2007, and a Distinguished Lecturer of the IEEE Circuits and Systems Society for 2006-2007. He is also a recipient of the Humboldt Research Award (2013) and the Humboldt Research Fellowship (2003), awarded by the Alexander von Humboldt Foundation, Germany. He holds nine US patents (5790562, 8373493, 8775108, 8782479, 8832608, 9128014, 9201042, 9367268, 9482720), and has several pending US patents. He served as Editor-in-Chief of *IEEE Design & Test of Computers* during 2010-2012, and *ACM Journal on Emerging Technologies in Computing Systems* during 2010-2015. Currently he serves as Editor-in-Chief of *IEEE Transactions on VLSI Systems* (2015-2016). He is an Editor of the *Journal of Electronic Testing: Theory and Applications (JETTA)*, and an Associate Editor of *ACM Transactions on Design Automation of Electronic Systems*, *IEEE Transactions on Computers*, *IEEE Transactions on Multiscale Comuting Systems*, and *IEEE Transactions on Biomedical Circuits and Systems*. He has completed terms as Associate Editor of *IEEE Transaction on Circuits and Systems I* (2006-2007), *IEEE Transactions on VLSI Systems* (2005-2009), *IEEE Transactions on Computer-Aided Design of Integrated Circuits and Systems* (2001-2013), and *IEEE Transactions of Circuits and Systems II* (2010-2013).

Prof. Chakrabarty received the B. Tech. degree from the Indian Institute of Technology, Kharagpur, India in 1990, and the M.S.E. and Ph.D. degrees from the University of Michigan, Ann Arbor in 1992 and 1995, respectively, all in Computer Science and Engineering . During 1990-95, he was a research assistant at the Advanced Computer Architecture Laboratory of the Department of Electrical Engineering and Computer Science, University of Michigan. During 1995-1998, he was an Assistant Professor of Electrical and Computer Engineering at Boston University.

Prof. Chakrabarty is a Fellow of ACM, a Fellow of IEEE, and a Golden Core Member of the IEEE Computer Society. He is a Hans Fischer Senior Fellow at the Institute for Advanced Studies, Technical University of Munich, Germany. He is also an Invitational Fellow of the Japan Society for the Promotion of Science (JSPS), 2009. He is a recipient of the IEEE Computer Society Technical Achievement Award (2015) and the Meritorious Service Award. Prof. Chakrabarty was a Chair Professor in the School of Software in Tsinghua University, Beijing, China (2009-2013), and a Visiting Chair Professor in Computer Science and Information Engineering at National Cheng Kung University in Taiwan (2012-2013). He has held Visiting Professor positions at University of Tokyo (Japan), Nara Institute of Science and Technology (Japan), and University of Potsdam (Germany), and a Guest Professor position at University of Bremen (Germany).

# Research

**Research Group**

**Visitors**

**Graduated Students**

**Postdocs and Research Scientists**

**Publications**

**Professional Activities**

**Keynote/Invited Talks at Conferences/Workshops**

**Other Invited Presentations**

**Tutorials**

# Teaching

ECE 152: Introduction to Computer Architecture, 2010 (Spring)
ECE 299: Discrete Optimization, 2008-2009 (Fall)
ECE 299: Embedded Real-Time Systems, 2007 (Fall)
ECE 156: Computer Network Architectures, 2006 (Fall)
ECE 261: CMOS VLSI Design Methodologies, 1998-2005, 2010-2011 (Fall)
ECE 538 (was ECE 269): VLSI System Testing, Spring 1999, Spring 2002-2003, Spring 2005, Spring 2007-2009, Spring 2011-2016
ECE 350: Digital Systems , Spring 2017
ECE 266: Synthesis and Verification of VLSI Systems, Spring 2000, Spring 2006
ECE 151: Introduction to Switching Theory and Logic Design, Spring 2001

## Contact Information:

*Krishnendu Chakrabarty*
*Electrical and Computer Engineering*
*Duke University*
*Box 90291, 130 Hudson Hall*
*Durham, NC 27708*
*E-mail: krish AT ee DOT duke DOT edu*
***Tel** : +1 (919) 660-5244*
***Fax** : +1 (919) 660-5293*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