

2019 BOARD NOMINEE

Keshav Pingali

Professor, Computer Science
University of Texas, Austin



CRA
Computing Research
Association

Awards and Honors and Year Received

- Fellow of the Association of Computing Machinery (ACM) (2012)
- IIT Kanpur Distinguished Alumnus Award (2013)
- Fellow of the American Association for the Advancement of Science (AAAS) (2010)
- Fellow of the Institute of Electrical and Electronics Engineers (IEEE) (2010)
- Russell Teaching Award, College of Arts and Sciences, Cornell University (1998)

Involvement in CRA Activities

- No

Other Relevant Experience

- NSF CISE Advisory Committee, 2009-2012
- NSF CISE Committee of Visitors, 2008
- Gordon Bell Prize committee, 2013-2017
- Steering committee, ACM Symposium on Programming Language Design and Implementation (PLDI), 2014-2017
- Steering committee chair, ACM Symposium on Principles and Practice of Parallel Programming (PPoPP), 2005-2013

Research Interests

- Programming languages
- parallel programming
- multicore and manycore architectures
- parallel algorithms
- control theory

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Personal Statement

What does it mean to be a computer scientist in a world in which computing and computational thinking have become integrated into many disciplines outside of computer science? Existential questions of this sort must be addressed carefully because they affect everything from the size and structure of CS departments to enrollments and budgets. The CRA is the right forum for discussing such matters, and I hope my extensive experience in working with computational engineers will be useful in addressing these questions in ways that are respectful of other disciplines while ensuring a strong and vibrant identity for our own.

KESHAV K. PINGALI

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University of Texas
Austin, Texas 78712
(512) 232-6567
Email: pingali@cs.utexas.edu

PERSONAL DATA:

- Date of Birth: February 22, 1957
- Citizenship: US

FIELDS OF INTEREST:

Programming languages, compilers, high-performance computer architecture, parallel and distributed computing, fault tolerance, control theory.

EDUCATION:

- ScD in Computer Science, May 1986, M.I.T., Cambridge, MA.
Title of ScD Thesis: Demand-driven Evaluation on Dataflow Machines
Advisor: Professor Arvind
- S.M. and E.E., May 1983, M.I.T., Cambridge, MA
- B.Tech., May 1978, Indian Institute of Technology, Kanpur, India

APPOINTMENTS:

- September 2006 - present: W. A. "Tex" Moncrief Chair of Computing, Department of Computer Science, University of Texas, Austin
- September 2003 - August 2006: India Chair of Computer Science, Cornell University
- August 1999 - August 2006: Professor, Department of Computer Science, Cornell University, Ithaca, NY
- April 1999 - August 2006: Professor, Department of Electrical and Computer Engineering, Cornell University, Ithaca, NY
- August 1993 - August 1999: Associate Professor, Department of Computer Science, Cornell University, Ithaca, NY
- September 1986 - August 1993: Assistant Professor, Department of Computer Science, Cornell University, Ithaca, NY
- May 1986 - August 1986: Post-doctoral Research Associate, Department of Computer Science, M.I.T., Cambridge, MA
- September 1978 - May 1986: Held a variety of research and teaching assistantships at M.I.T.

AWARDS and HONORS:

- IIT Kanpur Distinguished Alumnus Award (2013)
- Fellow of the Association of Computing Machinery (ACM) (2012)
- Fellow of the American Association for the Advancement of Science (AAAS) (2010)

- Fellow of the Institute of Electrical and Electronics Engineers (IEEE) (2010)
- W.A. “Tex” Moncrief Chair of Grid and Distributed Computing, University of Texas, Austin, 2006—
- India Chair of Computer Science, Cornell University, 2003-2006
- N. Rama Rao Professor, Indian Institute of Technology, Kanpur, India, 2000-2001
- Russell Teaching Award, College of Arts and Sciences, Cornell University, 1998
- Ip-Lee Teaching Award, College of Engineering, Cornell University, 1997
- NSF Presidential Young Investigator’s Award 1989-94
- IBM Faculty Development Award 1986-87
- President’s Gold Medal, I.I.T. Kanpur, 1978
- Lalit Narain Das Memorial Gold Medal, I.I.T. Kanpur, 1978
- National Science Talent Search Scholar, 1973

PROFESSIONAL ACTIVITIES:

Editorships:

- Associate editor, Distributed Computing, 2011-present.
- Associate editor, International Journal of Parallel Processing, 2000-present.
- Associate editor, ACM Transactions on Parallel Computing, 2014-present.
- co-Editor-in-chief, ACM Transactions on Programming Languages and Systems (TOPLAS), 2008-2010.
- Associate editor, IEEE Transactions on Parallel and Distributed Processing (2004-2005).

Major Committees:

- NSF CISE Advisory Committee, 2009-2012.
- NSF CISE Committee of Visitors, 2009.
- Gordon Bell Prize committee member, 2013-2017.
- Steering committee member, ACM Symposium on Programming Language Design and Implementation (PLDI), 2014-2017.
- Steering committee chair, ACM Symposium on Principles and Practice of Parallel Programming (PPoPP), 2005-2013.
- Steering committee member, ACM Symposium on Principles and Practice of Parallel Programming (PPoPP), 2005-present.

Patents:

- Specification and Synthesis of Work-sharing Constructs for Multicore Parallel Programming. US 20110302584A1, June 2011 (with Donald Nguyen).
- Programming Model and Software System for Exploiting Parallelism in Irregular Programs, US Patent 8,863,104, June 2008 (with Milind Kulkarni).
- Data-centric Multi-level Blocking, US Patent 6,357,041, March 12, 2002 (with Nawaaz Ahmed and Induprakas Kodukula).

Keynotes and Distinguished Lectures:

- Keynote speaker, ACM Symposium on Parallel Architectures and Compiler Techniques (PACT), Crete, November 2018.
- Keynote speaker, Autotuning and Adaptivity Approaches to Energy-efficient Computing (ANDARE), Portland, OR, November 2017.
- Panel member, 50 years of LCPC, Workshop on Languages and Compilers for Parallel Computing (LCPC), College Station, TX, October 2017.
- Keynote speaker, International Workshop on Code Optimizatin for Multicores and Manycores (COSMIC 2017), Austin, TX, February 2017.

- Keynote speaker, International Workshop on Architectures for Graph Processing (AGP), Toronto, Canada, June 2017.
- Keynote speaker, ApSys 2016, August 2016.
- Plenary speaker, Joint symposium on High-Performance Computer Architecture (HPCA), Principles and Practice of Parallel Programming (PPoPP), and Code Generation Optimization (CGO), March 2016.
- Keynote speaker, ParCo 2015, September 2015.
- Keynote speaker, SAMOS 2015, July 2015.
- Keynote speaker, European Joint Conference on Theory and Practice of Software (ETAPS), April 2015.
- Distinguished lecture, Department of Computer Science, University of California, Irvine, January 2015.
- Distinguished lecture, Data Institute, Imperial College, London, UK, January 2015.
- Keynote speaker, Workshop on Compilers for Parallel Computing (CPC), January 2015.
- Keynote speaker, Workshop on Irregular Applications: Architectures and Algorithms (IA3), November 2014.
- Distinguished lecture, Department of Computer Science, University of California, Riverside, February 2014.
- Distinguished lecture, Department of Computer Science, Indiana University, Bloomington, November 2013.
- Distinguished lecture, Department of Computer Science, Texas A&M University, College Station, October 2013.
- Distinguished lecture, Department of Computer Science, University of Illinois, Urbana-Champaign, September 2013.
- Keynote speaker, Swedish Multicore Day, Stockholm, Sweden, September 2013.
- Distinguished lecture, Department of Computer Science, Tsinghua University, Beijing, China, January 2013.
- Distinguished lecture, Department of Computer Science, Beihang University, Beijing, China, January 2013.
- Department Colloquium, Washington University at St. Louis, MO, October 2012.
- Plenary speaker, ACM Symposium on High-performance Computer Architecture (HPCA) and Principles and Practice of Parallel Programming (HPCA/PPoPP), February 2012.
- Keynote speaker, ICERM Workshop on Synchronization-reducing and Communication-reducing Algorithms and Programming Models for Large-scale Simulations, January 2012.
- Keynote speaker, High Performance and Embedded Architecture and Compilation (HIPEAC), Paris, France, January 2012.
- Keynote speaker, International Workshop on Polyhedral Compilation Techniques (IMPACT), Paris, France, January 2012.
- Distinguished lecture, Department of Computer Science, University of Utah, October 2011.
- Visions of Computing Lecture, Department of Computer Science, University of Texas at Austin, November 2010.
- Keynote speaker, Workshop on Languages and Compilers for Parallel Computing (LCPC 2010), Houston, USA, October 2010.
- Keynote speaker, Symposium on Parallel Architectures and Compilation Techniques (PACT 2010), Vienna, Austria, September 2010.
- Keynote speaker, Workshop on Exploiting Concurrency Efficiently and Concurrently (EC²), Edinburgh, Scotland, July 2010.

- Distinguished lecturer, Academia Sinica, Taiwan, August 2009.
- Distinguished lecturer, University of Illinois at Urbana-Champaign, April 2009.
- Keynote speaker, Workshop on Languages and Compilers for Parallel Computing (LCPC), August 2008.
- Keynote speaker, Workshop on Data Management on New Hardware (DaMoN), Vancouver, Canada, June 2008.
- Keynote speaker, Computing Frontiers (CF), Ischia, Italy (May 2008).
- Keynote speaker, International Conference on Parallel Processing (ICPP), Xi'an, China, September 2007.
- Distinguished lecturer, Department of Computer Science, University of Padua, Italy, June 2007.
- Distinguished lecturer, Department of Computer Science, Texas A&M University, April 2007.
- Distinguished lecturer, Department of Computer Science, University of Houston, October 2007.
- Distinguished lecturer, Department of Computer Science, Rice University, February 2006