Sivaram Ambikasaran

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Academic appointment

Assistant Professor, **August 2017 – Present**
Department of Mathematics,
Indian Institute of Technology Madras,
Chennai - 600 036

Previous appointments

Indian Institute of Science **April 2016 – August 2017**
Assistant Professor, Department of Computational & Data Sciences

ICTS, Tata Institute of Fundamental Research **Jul 2015 – Mar 2016**
Faculty, Interdisciplinary and Applied Mathematics

Courant Institute of Mathematical Sciences, New York University **Aug 2013 – May 2015**
Assistant Professor, Department of Mathematics

Education

Stanford University **Sep 2007 – Jun 2013**

- Doctor of Philosophy, Institute for Computational and Mathematical Engineering
  Thesis Title: Fast Algorithms for Dense Numerical Linear Algebra and Applications.
  Advisor: Prof. Eric Darve.
- Master of Science, Statistics
- Master of Science, Institute for Computational and Mathematical Engineering

Indian Institute of Technology Madras **Jul 2002 – Jun 2007**

- Master of Technology, Aerospace Engineering
- Bachelor of Technology, Aerospace Engineering

Research

Numerical Analysis, Numerical linear algebra, Fast algorithms, Approximation theory with applications to Inverse problems, Scattering, Computational statistics, Material Homogenization, Data assimilation, Filtering.

Honors & Awards

- "Young Scientist Award" by The Academy of Sciences, Chennai
- "Young Faculty Recognition Award" by Indian Institute of Technology, Madras, 2019.
- "Young Scientist Research Award" by the Department of Atomic Energy, India, 2017.
- Simons Foundation fellowship under "Science without Boundaries" of ICTS-TIFR, 2015.
- "INSPIRE Faculty Award" to young achievers for independent research and emerge as a leader in future science & technology by the Department of Science & Technology, India, 2015.
- Research Internship in Science and Engineering by Indo-US Science & Technology Forum at Tata Institute of Fundamental Research, Centre for Applicable Mathematics, Bangalore, 2011.
- Stanford Interdisciplinary Graduate Fellowship - Honorable mention, 2010.
- Centennial Teaching Assistant Award by Stanford in honor of outstanding teaching, 2009
- Stanford University departmental fellowship to pursue graduate studies, 2007.
- Cornell University departmental fellowship to pursue graduate studies, 2007 (declined).
- Dr. V. Mohan Raman Prize, for best academic record in Bachelors and Masters in Aerospace Engineering, Indian Institute of Technology Madras, India, 2007.
- Institute Medal for highest GPA in Aerospace Engineering for three consecutive years, Indian Institute of Technology Madras, India, 2004 – 07.
- 99.81 percentile (out of 200,000 students) in the Common Aptitude Test, an all-India test conducted by the Indian Institute of Management, India, 2007.
- General Electric Scholar-Leader scholarship for academic achievements and leadership qualities, 2006.

- One among 30 students from all over India, to get selected for the International Mathematical Olympiad Training Camp held at Homi Bhabha Center for Science and Education, Mumbai, India, 2002.
- First in Mathematics Olympiad held by Association of Mathematics Teachers of India, 2001 & 2002.
- Fellowship by Nanyang Technological University, to pursue undergraduate education in Engineering, 2002 (declined).
- One among 750 students from a pool of about 350,000 students to be awarded National Talent Search Examination Scholarship by the Central Government of India, 2000.

Teaching Experience

Go here for the list of all courses taught by me at Courant Institute, ICTS-TIFR, IISc and IIT Madras

Stanford University, CA

- Discrete Mathematics
  Summer program by "Army High Performance Computing Research Center" **Jul 2013**
- Numerical Linear Algebra
  Summer program by "Army High Performance Computing Research Center" **Jul 2012**
- Applied Analysis
  Math refresher course for incoming engineering graduate students. **Sep 2011**
- Numerical Linear Algebra
  Summer program by "Army High Performance Computing Research Center" **Jul 2011**
- Teaching Assistant, Institute for Computational and Mathematical Engineering **2008 – 2009**
  Undergrad courses in Vector Calculus, Linear Algebra and PDE's, Probability and Statistics

Mentoring

Go here for the list of all people mentored by me

Publications

Google Scholar (as of Feb 14^{th}, 2023): Number of citations: 2138, h-index: 16, i10-index: 22, Erdos number: 4

- **Journal Publications**:
  Google Scholar
- **Mathematical packages**:
  - BBFMM2D - Black Box Fast Multipole Method in two dimensions.
    Available at: `https://github.com/sivaramambikasaran/BBFMM2D`
  - FLIPACK - Fast Linear Inversion PACKage.
    Available at: `https://github.com/sivaramambikasaran/FLIPACK`
  - HODLR - Fast Direct Solver Package.
    Available at: `https://github.com/sivaramambikasaran/HODLR`
  - ESS - Extended SemiSeparable Solver.
    Available at: `https://github.com/sivaramambikasaran/ESS`
  - Celerite - Scalable 1D Gaussian Processes in C++, Python, and Julia
    Available at: `https://github.com/dfm/celerite`
  - George - Fast and flexible Gaussian Process regression in Python Available at: `https://github.com/dfm/george`

Conferences

Too many to keep track of.

Seminars & invited talks

Too many to keep track of.

Posters

Too many to keep track of.