



Soumendra Ganguly

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Research Interests

Analytic number theory, automorphic forms, L -functions, algebraic geometry applied to analytic number theory

Education

Ph.D. in Mathematics

Texas A&M University, College Station, Texas
August 2019 - August 2023 (expected)
advisor: Prof. Matthew Young

M.S. in Mathematical Sciences

Clemson University, Clemson, South Carolina
January 2017 - August 2019
advisor: Prof. Kevin James

M.Sc. in Mathematics

Chennai Mathematical Institute, Chennai, India
August 2014 - August 2016

B.Sc. (Honours) in Mathematics and Computer Science,

Chennai Mathematical Institute, Chennai, India
August 2011 - August 2014

Publications and preprints

Subconvexity for twisted L-functions on $GL(3) \times GL(2)$ and $GL(3)$ (in preparation, available to prospective employer upon request)

Ph.D. dissertation, Texas A&M University

m -ary partitions

master's thesis, Clemson University, 2019
https://tigerprints.clemson.edu/all_theses/3165/

Perfect Domination in Knights Graphs

The 49th Southeastern International Conference on Combinatorics, Graph Theory & Computing
<https://arxiv.org/abs/1805.03335>
With Todd Fenstermacher and Renu Laskar

Talks

- Jun 2023 **Conference talk**, Arithmetic Statistics in Automorphic Forms and Analytic Number Theory Workshop, EPF Lausanne
- May 2023 **Conference talk**, 35th Automorphic Forms Workshop, Louisiana State University
- Mar 2023 **Conference talk**, Southern Regional Number Theory Conference, Louisiana State University
- Nov 2022 **Subconvexity for twisted L-functions on $GL(3) \times GL(2)$ and $GL(3)$** , Algebra and Number Theory Seminar, University of Mississippi

Nov 2022 _____, Number Theory Seminar, Texas A&M University

Mar 2019 **Conference talk**, 50th Southeastern International Conference on Combinatorics, Graph Theory & Computing, Florida Atlantic University

Teaching and work experience

Texas A&M University:

- 2023 Instructor of record, **MATH 167 - Explorations in Mathematics**, spring
- 2022 Instructor of record, **MATH 167 - Explorations in Mathematics**, fall
- 2022 Recitation and Python lab TA, **MATH 152 - Engineering Mathematics II**, spring
- 2021 Recitation and Python lab TA, **MATH 151 - Engineering Mathematics I**, fall
- 2021 **Research Assistant**, summer
- 2021 Recitation and Python lab TA, **MATH 147 - Calculus I for Biological Sciences**, spring
- 2020 Recitation and Python lab TA, **MATH 152 - Engineering Mathematics II**, fall
- 2020 Grader, **MATH 470 - Communications and Cryptography**, summer
- 2020 Grader, **MATH 304 - Linear Algebra**, summer
- 2020 Grader, **MATH 411 - Mathematical probability**, spring
- 2019 Grader, **MATH 415 - Modern Algebra I**, fall
- 2019 Help session TA, **MATH 304 - Linear Algebra**, fall

Clemson University:

- 2019 Grader, **MATH 1080 - Calculus of One Variable II**, summer
- 2019 Grader, **MATH 8530 - Matrix Analysis (graduate)**, spring
- 2019 Lab TA, **MATH 1051 - Precalculus Laboratory**, spring
- 2019 Lab TA, **MATH 1991 - Problem Solving in Mathematics Laboratory**, spring
- 2018 Advanced teaching experience (under RTG grant from NSF), **MATH 4120 - Introduction to Modern Algebra**, fall
- 2018 Grader, **MATH 8050 - Data Analysis (graduate)**, summer
- 2018 Grader, **MATH 8050 - Data Analysis (graduate)**, spring
- 2018 Grader, **MATH 8530 - Matrix Analysis (graduate)**, spring
- 2018 Grader, **MATH 3110 - Linear Algebra**, spring
- 2017 Lab TA, **STAT 2301 - Statistical Methods I Laboratory**, fall
- 2017 TA (duties: preparing quizzes and worksheets), **MATH 1080 - Calculus of One Variable II**, summer
- 2017 Grader, **MATH 1060 - Calculus of One Variable I**, summer
- 2017 Classroom TA and Grader, **MATH 1080 - Calculus of One Variable II**, spring

Outreach

- 2022 **Math Circle** leader at the Texas A&M math circle, April 9

Workshops and conferences

- 2023 **Arithmetic Statistics in Automorphic Forms and Analytic Number Theory**, June 5-9
EPF Lausanne, Lausanne, Switzerland
- 2023 **Oberwolfach Seminar: Analysis of Automorphic Forms and L -Functions in Higher Rank**,
28 May - 02 June
Mathematisches Forschungsinstitut Oberwolfach, Oberwolfach, Germany
- 2023 **35th Automorphic Forms Workshop**, May 22-26
Louisiana State University, Baton Rouge, LA, USA
- 2023 **Southern Regional Number Theory Conference**, March 11-12
Louisiana State University, Baton Rouge, LA, USA
Online
- 2022 **ICTS Discussion Meeting on L-functions, Circle-Method and Applications**, 27 June - 01
July
Online
- 2022 **Southern Regional Number Theory Conference**, March 12-13
Louisiana State University, Baton Rouge, LA, USA
- 2021 **HIM Summer School: Polynomial Methods**, June 7-17
Online
- 2021 **HCM Hausdorff School: The Circle Method**, May 10-14 and May 17-21
Online
- 2019 **The 50th Southeastern International Conference on Combinatorics, Graph Theory &
Computing**, March
Florida Atlantic University, Boca Raton, FL, USA
- 2018 **The 49th Southeastern International Conference on Combinatorics, Graph Theory &
Computing**, March
Florida Atlantic University, Boca Raton, FL, USA
- 2018 **MAAM 2018: Mid-Atlantic Analysis Meeting**, November 9-11
Virginia Tech, Blacksburg, VA, USA
- 2018 **The Palmetto Number Theory Series (PANTS) XXXI**, December 8-9
University of South Carolina, Columbia, SC, USA
- 2017 **The Palmetto Number Theory Series (PANTS) XXVIII**, September 16-17
University of Tennessee, Knoxville, TN, USA
- 2017 **AMS Special Sessions on “Coding Theory, Cryptography, and Number Theory”**, March
10-12
College of Charleston, Charleston, SC, USA
- 2015 **Advanced Instructional School on Analytic Number Theory**, June 1-20
KIIT University, Bhubaneswar, India

Software experience

Mathematics: SageMath (SymPy, NumPy, Matplotlib, Jupyter), MATLAB, GNU Octave, R, JMP, \TeX (format: \LaTeX , engines: \pdfTeX , \LuaTeX), \PGF/TikZ

Teaching: CANVAS, Blackboard, TAMU eCampus, Moodle, WebAssign, MacMillan Learning Achieve, ALEKS, Gradescope, Poll Everywhere, essential usage of Microsoft 365 and Google Docs Editors for teaching, \LaTeX *exam* document class, Stylus-based note-taking and instruction using OneNote and Xournal++

System programming: Programmed in C on *nix (including macOS) and Microsoft Windows, made pseudoterminal-related contributions to **util-linux**, ***BSD libc**, **CPython**

Network programming: Network programming in C using network sockets, libcurl, libssh2, libwebsockets

Web: Front-end (HTML, CSS, JavaScript, Bootstrap, Hugo) and Back-end (Docker, Apache, NGINX, Django, PostgreSQL, Gunicorn, Redis), familiarity with Node.js ecosystem, npm

System administration: Debian, FreeBSD, Xterm variants, Bash, POSIX shell, grep, awk, sed, find, xargs, GNU Readline, tmux, i3wm, Xfce, GNU GRUB, LVM, ZFS, TestDisk, various command line and text-based filesystem, user account management, process, security, and disk utilities

Network administration: nmcli, wpa_supplicant, OpenSSH suite (sshd, ssh, scp, sftp), rsync, iptables, knockd, Fail2Ban, No-IP DDNS, MiniUPnPc, Cisco AnyConnect (client), OpenVPN (client), Nmap, Ncat, socat, various other command line and text-based network utilities

Hypervisors: QEMU, VirtualBox, VMware

Automation: XbindKeys (Linux, *BSD), AutoHotkey (Windows), Automator (macOS)

Software development: GNU Emacs (including Emacs Lisp, Org-mode), Git

Media and documents: FFmpeg, SoX, ImageMagick, JACK, GIMP, Inkscape, Ghostscript, Pandoc

Honors and achievements

The Kishore Vaigyanik Protsahan Yojana (KVPY) fellowship, awarded 2011
Funded by the Department of Science and Technology (Govt. of India) and implemented by IISc, Bangalore

Regional Mathematical Olympiad (RMO 2010), West Bengal, India

Languages

Proficient in **Bengali**, **Hindi**, and **English**