Milind V Gunjal

Department of Mathematics, Florida State University
1017 Academic Way, Tallahassee, FL 32306-4510, United States

Phone: (+91) 9860886867, (+1) 850-339-5191
email: milindvgunjal@gmail.com, milind.gunjal@tsc.fl.edu

Employment

Adjunct Assistant Professor (Tallahassee State College) 2025-Present
- Instructor of Record

Administrative Teaching Assistant (Florida State University) 2023-2025
- Instructor of Record
- Course development
- Coordinator of volunteers for the AMS sectional meeting
- Office assignments for teaching assistants
- Computer lab resource management
- Qualifiers proctoring

Teaching Assistant (Florida State University) 2019-2023
- Instructor of Record 2020-2023
- Lab Instructor 2019-2020

Education

PhD at Florida State University 2019-2025
MS at Florida State University (CGPA: 3.91/4) 2019-2021
BS-MS at IISER-Kolkata (CGPA: 8.56/10, Valedictorian) 2014-2019

Areas of interest

Mathematics • Algebraic topology, Category theory, Homotopy theory, K-theory.

Fellowships & awards

Dwight B. Goodner Mathematics Fellowship 2024
Distinguished Teaching Assistant 2023
Kishore Vaigyanik Protsahan Yojana (KVPY) Fellow 2014-2019
Indian Institute of Technology Joint Entrance Exam Advanced Qualified 2014

Research projects undertaken

Cocycles with values in a Picard category from an SM 2-Cat (PhD thesis) Advisor: Dr. Ettore Aldrovandi, FSU	10/2023- 04/2025
Comparison of Segal and Waldhausen K-theory via MacLane cubes Joint with Dr. Ettore Aldrovandi, Dr. Brandon Doherty, Arash Karimi, FSU	08/2023- 08/2024
K-theory of a Waldhausen Category Joint with Dr. Ettore Aldrovandi, FSU	10/2020- 04/2025
Vector bundles from algebraic viewpoint (MS thesis) Supervisor: Dr. Somnath Basu, IISER-K	08/2018- 05/2019
Representation theory of GL(2,F_q) Supervisor: Dr. Utsav Choudhury, ISI-Kolkata	08/2018- 12/2018
Study of simplicial and singular homology Supervisor: Dr. Priyavrat Deshpande, CMI, Chennai	05/2018- 07/2018
Hilbert Nullstellensatz Supervisor: Dr. Somnath Basu, IISER-K	01/2018- 05/2018
Study of modules of ring of continuous functions Supervisor: Dr. Somnath Basu, IISER-K	08/2017- 12/2017
Study of evolutionary game theory Supervisor: Dr. Supratim Sengupta, IISER-K	05/2017- 07/2017
Study of elementary number theory and cryptography Supervisor: Dr. S A Katre, SPPU, Pune	05/2016- 07/2016

Seminars and Conference Talks

Introduction to stable homotopy theory (Advanced Seminar in Algebra at FSU) (Notes)	04/2024
AMS Sectional Meeting at FSU (Slides)	03/2024
Lloyd Roeling Conference at UL (Slides)	03/2024
Cohomology with values in a Picard Category (Advanced Seminar in Algebra at FSU) (Slides)	12/2023
Stabilization of 2-Crossed Modules (BUGCAT'23) (Slides)	11/2023
K-theory of a Waldhausen category (Kan Seminar) (Slides)	11/2023
Homotopy theory of Model Categories (Advanced Seminar in Algebra at FSU) (Notes)	04/2023
Stabilization of 2-Crossed Modules (Advanced Seminar in Algebra at FSU) (Slides)	04/2022
2-type of the K-theory of a Waldhausen category (FSU) (Slides)	12/2021

Seminars and Conferences Attended

Algebraic Structures in Topology, San Juan, PR	06/2024
Graduate Student Topology and Geometry Conference 2024, MSU	04/2024
AMS Sectional Meeting, FSU	03/2024
Lloyd Roeling Conference, UL	03/2024

Binghamton University Graduate Combinatorics Algebra Topology Conference	11/2023
Online workshop on $(\infty, 2)$-Categories	10/2023-11/2023
Kan Seminar	09/2023-12/2023
eCHT Research Seminar	09/2023-11/2023
Summer school on Scissors Congruence, Algebraic K-Theory, and Trace Methods, IU	06/2023
Mid-Atlantic Topology Conference, UPenn	04/2023
Advance Seminar in Topology and Geometry, FSU	08/2019 - Present
Advanced Seminar in Algebra, FSU	08/2019 - Present
Seminar series on Moduli spaces, IISER-K	11/2018
FACETS, IMSc, Chennai	07/2018
Young Topologists' Meet, CMI, Chennai	07/2018
Madhava Mathematics Competition Nurture Camp, CMI, Chennai	06/2018
Learning seminar on Morse Theory, IISER-K	01/2018 - 04/2018

Teaching

Mathematical Thinking (MGF1130) (Instructor of Record at TSC)	Spring 2026
College Algebra (MAC1105) (Instructor of Record at TSC, 3 sections)	Fall 2025
Calculus III (MAC2313) (Instructor of Record at FSU)	Fall 2024
Calculus II (MAC2312) (Instructor of Record at FSU)	Fall 2023
Calculus II (MAC2312) (Instructor of Record at FSU)	Spring 2023
Discrete Mathematics I (MAD2104) (Recitation Instructor at FSU)	Fall 2022
Calculus I (MAC2311) (Instructor of Record at FSU)	Summer 2022
Calculus I (MAC2311) (Instructor of Record at FSU)	Spring 2022
Calculus I (MAC2311) (Recitation Instructor at FSU)	Fall 2021
Precalculus Algebra (MAC1140) (Instructor of Record at FSU)	Spring 2021
Precalculus Algebra (MAC1140) (Instructor of Record at FSU)	Fall 2020

Advanced Courses Undertaken

- **Stable Homotopy Theory** ref. Cary Malkiewich - Spectra and stable homotopy theory (eCHT, WSU)
- **Symplectic Geometry** ref. Ana Cannas da Silva - Lecture Notes (FSU)
- **Differential Geometry of Bundles** ref. Sharpe - Differential Geometry (FSU)
- **Algebraic Geometry** ref. David Eisenbud and Joe Harris - 3264, and Robin Hartshorne - Algebraic Geometry (FSU)
- **Homological Algebra** ref. C. Weibel - An Introduction to Homological Algebra (FSU)
- **Algebraic Geometry by way of Scheme Theory** ref. Ravi Vakil - The Rising Sea: Foundations of Algebraic Geometry (FSU)

- **Geometric Structures on Manifolds** (FSU)
- **Logic, Type Theory, and the Mechanization of Mathematics** (FSU)
- **Differential Topology II** ref. John Lee - Introduction to Smooth Manifolds (FSU)