

Arnab Kundu

Researcher, Age: 27 years

Department of Mathematics
University of Toronto, St. George Campus
✉ arnab.kundu@utoronto.ca
<http://www.arnabkundu.com>

Employment

Sept 2023 – **Post-Doctoral Fellow**, *University of Toronto*, Toronto, Canada, in the group of [Elden Elmanto](#).

Education

Sept 2020 – Aug 2023 **PhD in Mathematics**, *Université Paris-Saclay*, Orsay, France, under the supervision of [Kęstutis Česnavičius](#).
Thesis: Torsors on Smooth Algebras over Valuation Rings ([Official Version](#))

Sept 2018 – Aug 2020 **Master : Mathématiques Fondamentales**, *Sorbonne Université*, Paris, France, Score - 18.9/20.
Mention: Très Bien

Aug 2015 – July 2018 **B.Sc.(Hons.)**, *Chennai Mathematical Institute*, Chennai, India, CGPA - 9.83.
Mathematics and Computer Science Undergraduate

Preprints

Beilinson–Lichtenbaum phenomenon for motivic cohomology, preprint available on request, with [T. Bouis](#).

[arXiv link](#) **Isotropic torsors on smooth algebras over Prüfer rings**, submitted, 2025.

[arXiv link](#) **Gersten’s injectivity for smooth algebras over valuation rings**, submitted, 2024.

Publications

[jrms:2023-038...](#) **Tilting Correspondences of Perfectoid rings**, *J. Ramanujan Math. Soc.* **38**, No. 1 (2023) 23–32.

Achievements:

- Received **FSMP** (Fondation Sciences Mathématiques de Paris) PSGM Masters 2018-2020 scholarship.
- Received a **Gold Medal** for the best undergraduate academic record of the 2018 batch.
- Attended the Indian **IMO training camp** in '13, '14 and '15 at HBCSE, Mumbai.

Mathematical Visits

- Fall 2024 **CMI, Chennai**, invited by [Vikraman Balaji](#).
- **UBC, Vancouver**, invited by [Sujatha Ramdorai](#) & [Shubhodip Mondal](#).
Spring 2023 **KTH, Stockholm**, invited by [David Rydh](#).
Fall 2022 **TU Darmstadt**, invited by [Timo Richarz](#).

Colloquium Talks

- 2025 **Mathematics Colloquium**, *IMSc, Chennai*, Motivic Cohomology in mixed-characteristic.

Conference Talks

- November 2024 **Special Session on Algebraic Geometry**, *CMS Meeting, Vancouver*, Motivic Cohomology in mixed-characteristic.
June 2024 **K-theory and Brauer Groups**, *Oaxaca*, \mathbb{A}^1 -invariance of Motivic Cohomology, [\(video\)](#).
December 2023 **Special Session on Homotopy Theory**, *CMS Meeting, Montréal*, Gersten's injectivity in the non-Noetherian world.

Seminar Talks

- February 2025 **Topology Seminar**, *Columbia University, New York*, Beilinson–Lichtenbaum Conjecture in Mixed-characteristic.
January 2025 **Algebraic Geometry Seminar**, *Toronto*, Motivic Cohomology in mixed-characteristic.
December 2024 **Algebraic Geometry Seminar**, *CMI, Chennai*, Grothendieck–Serre Conjecture for Parahoric Group Schemes.
November 2024 **UBC Algebraic Geometry Seminar**, *Vancouver*, Motivic Cohomology in mixed-characteristic.
October 2024 **Number Theory Seminar**, *Toronto*, Grothendieck–Serre Conjecture for Parahoric Group Schemes, [\(video\)](#).
November 2023 **Algebraic Geometry Seminar**, *Toronto*, Gersten's injectivity in the non-Noetherian world.
- **Arithmetic and Algebraic Geometry Seminar**, *Allahabad*, Gersten's injectivity in the non-Noetherian world.
April 2023 **Algebra and Geometry Seminar**, *Stockholm*, Tilting Correspondences of Perfectoid Rings.
January 2023 **Algebraic Geometry Seminar**, *Purdue*, Torsors on Valuation Rings.
- **Algebra and Geometry Seminar**, *Stockholm*, Torsors on Valuation Rings.
- **Stacks Seminar**, *Essen*, Torsors on Valuation Rings.

- **Arithmetic and Algebraic Geometry Seminar**, *Amsterdam*, Torsors on Valuation Rings.
- December 2022 **Arithmetic Geometry Seminar**, *Heidelberg*, Torsors on Valuation Rings.
- **Seminar on Arithmetic Geometry**, *Darmstadt*, Torsors on Valuation Rings.
- November 2022 **Preprint Seminar**, *Paris*, Torsors on the Complement of a Smooth Divisor.
- October 2022 **Seminar Mathjeunes**, *Paris*, Torsors on Valuation Rings.
- June 2022 **Seminar SAGA**, *Orsay*, Tilting Correspondences of Perfectoid Rings.
- December 2021 **Seminar RéGA**, *Paris*, Tilting Correspondences of Perfectoid Rings.

Organisation of Seminar

- 2024-2025 **Algebraic Geometry Seminar**, *University of Toronto*, Toronto, Canada, with E. Elmanto, Daniel Litt, Nick Rozenblyum, Sebastián Olano, [Website](#).
- **Number Theory Seminar**, with Florian Herzig, [Website](#).
- Fall 2024 **Seminar on the Unramified Cohomology**, with E. Elmanto.
- Fall 2023 **Seminar on the Grothendieck–Serre Conjecture**, with E. Elmanto, [Website](#).
- 2022-2023 **Seminaire Réseau des étudiants en Géométrie Algébrique (RéGA)**, *Institut Henri Poincaré(IHP)*, Paris, France, [Website](#).

Teaching Experience

- Spring 2025 & Fall 2023 **MAT223 Linear Algebra I**, *Course Instructor*, University of Toronto, Canada.
- Spring 2025 **MAT224 Linear Algebra II**, –.
- Spring 2024 **MAT344 Intro to Combinatorics**, –.
- Fall 2022, 2021 & 2020 **Mathematics - 1**, *Teacher*, Institut Universitaire de Technologie (IUT), Cachan, France
- Fall 2016 **Analysis 1**, *Teaching Assistant*, Chennai Mathematical Institute (CMI), Chennai, India.
- January 2016 **Indian National Mathematical Olympiad Training Camp**, *Instructor*, The Institute of Mathematical Sciences (IMSc), Chennai.

Workshops and Conferences Attended

- Fall 2024 **2024 CMS Winter Meeting (Special Session on Algebraic Geometry)**, *Vancouver, Canada*.
- Summer 2024 **Algebraic K-theory and Brauer Groups**, *Oaxaca, Mexico*.
- Spring 2024 **Workshop on p-adic Arithmetic Geometry (Spring)**, *IAS, Princeton, USA*.
- Fall 2023 **2023 CMS Winter Meeting (Special Session on Homotopy Theory)**, *Montréal, Canada*.
- **Workshop on p-adic Arithmetic Geometry (Fall)**, *IAS, Princeton, USA*.

- Summer 2023 **Stacks Project Workshop 2023**, *University Of Michigan*, Ann Arbor, USA.
- **Summer School 2023**, *University of Wuppertal*, Wuppertal, Germany.
 - **Recent Advances in Algebraic K-Theory**, *IHES*, Bures-sur-Yvette, France.
- Spring 2023 **International Workshop on Motives**, *University of Tokyo*, Tokyo, Japan.
- Spring 2022 **Franco-Asian Summer School on Arithmetic Geometry**, *CIRM*, Luminy, France.
- **Géométrie Algébrique en Liberté (GAeL) XXIX**, *Université Paris-Saclay*, Orsay, France.
 - **Cohomology of Varieties**, *IMPAN*, Warsaw, Poland.
 - **Kleine AG: Weil Conjectures**, *Universität Bonn*, Germany.
- Fall 2019 **Perfectoid Spaces**, *ICTS*, Bangalore, India.
- Summer 2019 **Arithmetic Geometry in Carthage**, *Tunisian Academy Beit al-Heikma*, Carthage, Tunisia.
- Summer 2018 **École Jeunes Chercheurs en Théorie des Nombres 2018**, *Université de Franche-Comté Laboratoire de Mathématiques de Besançon*, Besançon, France.
- Winter 2017 **ATMW Analytic Number Theory**, *ISI*, Kolkata, India.
- Winter 2016 **Theoretical and Computational Aspects of the Birch and Swinnerton-Dyer Conjecture**, *ICTS*, Bangalore, India.

Languages

Bengali (Native), English, French, Hindi

German (Learning)

Computer skills

Programming Python, Haskell, C++, Java

Web design HTML, CSS