Arnab Kundu

Postdoc researcher, Age: 27 years

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Research Interests: Arithmetic Geometry and Motivic Homotopy Theory.

Employment

Sept 2025-	**Postdoctoral Researcher**, *Simion Stoilow Institute of the Romanian Academy (IMAR)*, Bucharest, Romania, in the group of Olivier Schiffmann.
Sept 2023 – Aug 2025	**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

arXiv link	$\mathbb{A}^1$-**connectivity of motivic spaces**, *preprint*, 2025, with Tess Bouis.
arXiv link	**Beilinson–Lichtenbaum phenomenon for motivic cohomology**, *submitted*, 2025, with Tess 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.

Thesis

Official Version **Torsors on smooth algebras over valuation rings**, *Thesis*.

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

Spring 2026	**LMSI, Mumbai**, *Special Semester on Algebraic Groups*.
Fall 2025 & 2024	**CMI, Chennai**, *invited by Vikraman Balaji*.
Fall 2024	**UBC, Vancouver**, *invited by Sujatha Ramdorai*.
Spring 2023	**KTH, Stockholm**, *invited by David Rydh*.
Fall 2022	**TU Darmstadt**, *invited by Timo Richarz*.

Colloquium Talks

November 2025	**Mathematics Colloquium**, *IMSc*, Chennai, Motivic Cohomology in mixed-characteristic.
October 2025	**Mathematics Seminar**, *CMI*, Chennai, Motivic Cohomology in mixed-characteristic.

Conference Talks

January 2026	**Motives in Montpellier**, *Montpellier, France*, How to apply motivic cohomology in p-adic Hodge theory.
September 2025	**Algebraic and Arithmetic Geometry Week(AAG 2025)**, *Iași, Romania*, Grothendieck–Serre Conjecture for Parahoric Group Schemes.
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

January 2026	**Number Theory Seminar**, *Caen, France*, Purity of motivic cohomology over deeply-ramified bases.

November 2025	**Mathematics Seminar**, *CMI*, Chennai, $\mathbb{A}^1$-connectivity of Motivic Spaces.
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

Spring 2024	**Workshop on p-adic Arithmetic Geometry (Spring)**, *IAS*, Princeton, USA.
–	**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