

Thomas Budzinski

Researcher in probability

ENS de Lyon site Monod
Bureau MGN1-460
46 Allée d'Italie, 69364 Lyon Cedex 07
✉ thomas (dot) budzinski (at) ens-lyon.fr

Positions held

- 2021– **Chargé de recherche CNRS**, *ENS de Lyon*.
Junior permanent research position
- 2019–2020 **PIMS-CNRS Postdoctoral Fellow**, *UBC*, Vancouver, Canada.
- 2016–2019 **Teaching assistant**, *ENS Paris*, Paris, France.

Education

- 2015–2018 **PhD Student**, *Université Paris-Saclay*.
"Hyperbolic random maps", under the supervision of Nicolas Curien
- 2012–2016 **Student of the ENS Paris**.
 - 2015 **Master 2 de Mathématiques, spécialité Probabilités et Modèles Aléatoires**, *Université Paris 6*.
With highest honors. Master Thesis with Nicolas Curien about random planar maps.
 - 2012 **Admitted to the ENS Paris**.
Concours MPI, ranked first
- 2010–2012 **Classes préparatoires MPSI-MP***, *Lycée Louis Le Grand*, Paris.
- 2007–2010 **Baccalauréat S (High School Graduation)**, *Lycée Henri Poincaré*, Nancy.
With highest honors

Research papers

- 2024 **Local limits of random bipartite maps in high genus: the general case**.
submitted
- 2023 **Distances and isoperimetric inequalities in random triangulations of high genus**, with Guillaume Chapuy and Baptiste Louf.
submitted
- 2023 **Maximum Agreement Subtrees and Hölder homeomorphisms between Brownian trees**, with Delphin Sénizergues.
in *Journal de l'École Polytechnique*
- 2022 **The critical Karp–Sipser core of random graphs**, with Alice Contat and Nicolas Curien.
submitted
- 2022 **On Cheeger constants of hyperbolic surfaces**, with Nicolas Curien et Bram Petri.
submitted
- 2021 **Multi-ended Markovian triangulations and robust convergence to the UIPT**.
in *Annales Henri Lebesgue*
- 2021 **Local limits of bipartite maps with prescribed face degrees in high genus**, with Baptiste Louf.
in *Annals of Probability*

- 2020 **Cooperative and stochastic multi-player multi-armed bandits: optimal regret with neither communication nor collisions**, with Sébastien Bubeck and Mark Sellke.
at *COLT 2021*
- 2020 **Coordination without communication: optimal regret in two players multi-armed bandits**, with Sébastien Bubeck.
at *COLT 2020*
- 2019 **Recurrence of the Uniform Infinite Half-Plane Map via duality of resistances**, with Thomas Lehericy.
in *Annals of Probability*
- 2019 **The diameter of random Belyi surfaces**, with Nicolas Curien and Bram Petri.
in *Algebraic and Geometric Topology*
- 2019 **On the minimal diameter of closed hyperbolic surfaces**, with Nicolas Curien et Bram Petri.
in *Duke Mathematical Journal*
- 2019 **Universality for random surfaces in unconstrained genus**, with Nicolas Curien and Bram Petri.
in *Electronic Journal of Combinatorics*
- 2019 **Local limits of uniform triangulations in high genus**, with Baptiste Louf.
in *Inventiones Mathematicae*
- 2018 **Supercritical causal maps: geodesics and simple random walk**.
in *Electronic Journal of Probability*
- 2018 **Infinite geodesics in hyperbolic random triangulations**.
in *Annales de l'IHP B*
- 2016 **On the mixing time of the flip walk on triangulations of the sphere**.
in *Compte-rendus mathématiques de l'Académie des Sciences*
- 2016 **The hyperbolic Brownian plane**.
in *Probability Theory and Related Fields*

Book

- 2021 **Les Olympiades Internationales de Mathématiques 2006–2021**, with Pierre Bornsztein and Vincent Jugé.
Cassini Editions

Talks

- November 2023 **LPSM Probability Seminar**, *Jussieu*, Paris, France.
- June 2023 **DYOGENE team Seminar**, *Inria*, Paris, France.
- June 2023 **LABRI Combinatorics Seminar**, Bordeaux, France.
- March 2023 **Journées ALEA**, *CIRM*, Luminy, France.
- February 2023 **"Percolation today" webinar**, online.
with Alice Contat
- January 2023 **Random Geometry Workshop**, *CIRM*, Luminy, France.
- September 2022 **Grenoble Probability Seminar**, Grenoble, France.
- January 2022 **Random Geometry Conference**, *CIRM*, Luminy, France.
- September 2021 **Journée Cartes**, Lyon, France.

- July 2021 **World Congress of Probability and Statistics**, online.
Invited session: "random planar geometries"
- March 2021 **Lyon Probability Seminar**, online.
- March 2021 **UT Group and Dynamics Seminar**, online.
- February 2021 **Orsay Probability Seminar**, online.
- October 2020 **Random Geometry and Statistical Physics Seminar**, online.
- September 2020 **PIMS Postdoctoral Fellow Seminar**, online.
- July 2020 **Conference On Learning Theory**, online.
- October 2019 **UBC Probability Seminar**, Vancouver, Canada.
- July 2019 **Saint-Flour Probability Summer School**, Saint-Flour, France.
- May 2019 **Random maps and matrices from a geometric perspective**, Lyon, France.
- May 2019 **Horowitz seminar**, Tel Aviv, Israel.
- April 2019 **Seminar on Stochastic Processes**, Zürich, Switzerland.
- March 2019 **UBC Probability Seminar**, Vancouver, Canada.
- January 2019 **Young Statisticians and Probabilists**, *IHP*, Paris, France.
- October 2018 **Mathematical Physics seminar**, Geneva, Switzerland.
- August 2018 **Journées MAS**, Dijon, France.
Invited session: "random graphs, networks and maps".
- July 2018 **Random geometry follow-up workshop**, Cambridge, Angleterre.
- May 2018 **Colloque Jeunes Probabilistes et Statisticiens**, Oléron, France.
- April 2018 **Journée Cartes**, Orsay, France.
- November 2017 **Journée STIC "Flips"**, *Université Paris 13*, Villetaneuse, France.
- November 2017 **Probability seminar of Toulouse**, Toulouse, France.
- May 2017 **Combinatorics seminar of the LIX**, *École polytechnique*, Palaiseau, France.
- May 2017 **Journée "Les probabilités de demain"**, *IHÉS*, Bures-sur-Yvette, France.
- March 2017 **Journées ALEA**, *CIRM*, Luminy, France.
- December 2016 **Journées de l'ANR GRAAL**, Nancy, France.
- July 2016 **Saint-Flour Probability Summer School**, Saint-Flour, France.

Teaching

- 2022–2023 **Refresher M2 course "Martingales and Brownian motion"**, *ENS Lyon*.
- 2021– **Premaster course "Ramsey Theory"**, *ENS Lyon*.
- 2020–2021 **Seminar in English**, *ENS Lyon*.
Supervision of a group of six M2 students
- 2020–2021, **Math 203 (Calculus III: Multivariable calculus)**, *UBC*, online.
Term 1
- 2019–2020, **Math 303 (Introduction to stochastic processes)**, *UBC*, Vancouver.
Term 2
- 2019–2020, **Math 104 (Differential Calculus with applications in business and social sciences)**, *UBC*, Vancouver.
Term 1
- 2016–2019 **TA for the course "Stochastic processes"**, *ENS Paris*, Paris.
The course was given by Dmitry Chelkak

- 2016-2018 **Reading seminar about the probabilistic method**, *ENS Paris*, Paris.
- 2012-2019 **Preparation of the french team for international mathematics competitions.**
- 2014 **Team leader of a team at the TFJM and the ITYM**, Palaiseau and Bremen.
The TFJM (resp. the ITYM) is a french (resp. international) competition where teams of high school students have several months to search partly open problems.
- 2013-2016 **Oral examiner in "Classes préparatoires"**, *Lycée Louis Le Grand*, Paris.

Supervision

- 2022 **Supervision of the Master 1 internship of Hugo Koubbi.**
Super-hyperbolic random maps
- 2019 **Supervision of the first-year dissertation of Victor Dubach and Emmanuel Kammerer.**
The trace reconstruction problem.
- 2017 **Supervision of the first-year dissertation of Jules Candau-Tilh and Enguerand Petit.**
Random walks, electric networks and circle packings.

Awards and distinctions

- 2011 **International Physics Olympiad**, Bangkok, Thailand.
Gold Medal
- 2010 **International Mathematical Olympiad**, Astana, Kazakhstan.
Silver Medal
- 2009 **International Mathematical Olympiad**, Bremen, Germany.
Bronze Medal

Responsibilities

- 2022- **Co-organizer of the Lyon Probability Seminar.**
- 2022- **Responsible of the entrance competitive exam for the Math Department, *ENS de Lyon*.**
Finding oral examiners and paper graders
- 2022 **Organizer of a "Journée Cartes"**, *ENS de Lyon*.
With Grégory Miermont
- 2021-2022 **Examiner for the oral Mathematics entrance competitive exam at ENS Lyon for university students.**
- 2018-2019 **Responsible of the relationships of the Maths Department of the ENS with the "classes préparatoires".**
- 2015-2018 **Chair of the problem redaction committee of the TFJM.**
- 2014-2019 **Organizer of the Parimaths club**, Paris.
Parimaths is a mathematics club for high school students who enjoy mathematics. Sessions are organized each Saturday afternoon at the ENS in Paris.
- 2018 **Organizer of a "Journée Cartes"**, *ENS Paris*.
With Sanjay Ramassamy.
- 2016 **Organizer of a "Journée Cartes"**, *IHES*, Bures-sur Yvette.
With Linxiao Chen.
- 2014-2015 **Organizer of the Students' probability seminar of the ENS Paris.**