Thomas Budzinski

Researcher in probability

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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

2025 **The longest increasing subsequence of Brownian separable permutons** , with Arka Adhikari, Jacopo Borga, William Da Silva and Delphin Sénizergues.
preprint

2024 **The critical Karp-Sipser core of Erdos-Rényi random graphs**, with Alice Contat.
to appear in *Annales de l'IHP : Probabilités et Statistiques*

2024 **Local limits of random bipartite maps in high genus: the general case**.
in *Electronic Communications in Probability*

2023 **Distances and isoperimetric inequalities in random triangulations of high genus**, with Guillaume Chapuy and Baptiste Louf.
in *Annals of Probability*

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.
in *Annals of Applied Probability*

2022 **On Cheeger constants of hyperbolic surfaces**, with Nicolas Curien et Bram Petri.
in *Inventiones Mathematicae*

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 Lehéricy.
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

March 2026 **2026 ALEA Days**, *CIRM*, Luminy, France.
Long talk

November 2025 **"Combinatorics and Discrete Probability" Workshop**, *CIRM*, Luminy, France.

November 2025 **Meeting of the ANR LOUCCOUM**, Poitiers, France.

November 2025 **Probability, Stochastic Analysis and Statistics Seminar**, *SNS*, Pisa, Italy.

February 2025 **Stochastic Calculus Seminar**, *IRMA*, Strasbourg, France.

November 2024 **"Random hyperbolic surfaces and random graphs" Workshop**, *CIRM*, Luminy, France.

July 2024 **"Two-dimensional random geometry" Workshop**, *IMSI*, Chicago, USA.

May 2024 **"Statistical Physics and Random Surfaces" Worhshop**, *MFO*, Oberwolfach, Germany.

January 2024 **Pisa à la carte**, Pisa, Italy.

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

2024 **M2 course on random walks**, *ENS Lyon*.
24 hours

2022– **Refresher M2 course "Martingales and Brownian motion"**, *ENS Lyon*.
15 hours

2021–2023 **Premaster course "Ramsey Theory"**, *ENS Lyon*.
12 hours

2020–2021 **Seminar in English**, *ENS Lyon*.
Supervision of a group of six M2 students

2020–2021, Term 1 **Math 203 (Calculus III: Multivariable calculus)**, *UBC*, online.

2019–2020, Term 2 **Math 303 (Introduction to stochastic processes)**, *UBC*, Vancouver.

2019–2020, Term 1 **Math 104 (Differential Calculus with applications in business and social sciences)**, *UBC*, Vancouver.

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 studets have several months to search partly open problems.

2013–2016 **Oral examiner in "Classes préparatoires"**, *Lycée Louis Le Grand*, Paris.

Supervision

2024– **Co-supervision of the PhD thesis of Tanguy Lions**, *ENS de Lyon*.
Local limits of high genus random maps with boundaries

2025 **Supervision of the Master 2 internship of Roberto Tocco**, *SNS di Pisa*.
Robust convergence to random hyperbolic triangulations

2022 **Supervision of the Master 1 internship of Hugo Koubbi**, *ENS de Lyon*.
Super-hyperbolic random maps

2019 **Supervision of the first-year dissertation of Victor Dubach and Emmanuel Kammerer**, *ENS de Paris*.
The trace reconstruction problem.

2017 **Supervision of the first-year dissertation of Jules Candau-Tilh and Enguerand Petit**, *ENS de Paris*.
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

Responsabilities

2022– **Co-organizer of the Lyon Probability Seminar**.

2022– **Responsable of the entrance competitive exam for the Math Department**, *ENS de Lyon*.
Finding oral examiners and paper graders

2025 **Co-organizer of the "Combinatorial and hyperbolic random planar geometry" Workshop**, *CIRM*, Luminy, France.
With Nicolas Curien

2022, 2024 **Co-organizer of "Journées 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 **Responsable 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 **Co-organizer of a "Journée Cartes"**, *ENS Paris*.
With Sanjay Ramassamy.

2016 **Co-organizer of a "Journée Cartes"**, *IHES*, Bures-sur Yvette.
With Linxiao Chen.

2014–2015 **Organizer of the Students' probability seminar of the ENS Paris**.
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