



Gabriel Lehericy

Education

- 2007–2011 **Bachelor in Mathematics**, *Université Paris 6, Paris.*
- 2011–2013 **Master in mathematics, with specialization in mathematical logic**, *Technische Universität Berlin (Erasmus) and Université Paris 7.*
- 2013–2014 **Preparation to “Agrégation”**, *Université Paris 6.*
- 2014–2018 **Ph.D. in mathematics**, *Universität Konstanz and Université Paris 7.*

Ph.D. thesis

- Institution *Université Paris 7 and Universität Konstanz*
- Field *Algebra and mathematical logic*
- Title *Quasi-orders, C-groups, and the differential rank of a differential-valued field*
- Supervisors *Prof. Salma Kuhlmann and Pr. Françoise Point*

Further Training

- 2018 **Summer school FoPSS “Logic and Learning”**, *University of Oxford.*
Summer school about the foundations of machine learning (supervised learning, reinforcement learning and bayesian learning)
<http://fopss18.mimuw.edu.pl/>
- 2018 **Research stay on machine learning**, *University of Edinburgh, school of informatics, Edinburgh.*
Research stay with Prof. Shay Cohen to work on interactions between mathematics and machine learning
- 2020 **Online Course “machine learning”**, *Stanford University (on coursera.org).*

Experience

Positions

- 2014–2017 **Wissenschaftlicher Mitarbeiter**, *Universität Konstanz, department of mathematics, Konstanz.*
Research and teaching in pure mathematics
- 2017–2018 **ATER**, *Université Paris 7, department of mathematics, Paris.*
Research and teaching in pure mathematics

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2018–2020 **Post-doc researcher**, *De Vinci Research Center, Finance Research team*, Paris.
Research on Bitcoin and the Lightning Network
Teaching pure mathematics to bachelor students

Event organisation

2017 **Block seminar on Jordan groups**, *Universität Konstanz*.
www.math.uni-konstanz.de/~lehericy/Blockseminar.html

2018 **Conference “Real Algebraic Geometry and Model Theory”**, *Universität Konstanz*.
<http://www.math.uni-konstanz.de/~krapp/RAGMT/index.html>

Languages

French Fluent (First language)
English Fluent
German Fluent
Polish Advanced
Mandarin Intermediate
Russian Intermediate
Spanish Intermediate

Hard skills

Mathematics pure mathematics, mathematical thinking, mathematical modeling, Latex

Programming python, java, C, R, android studio, xml, octave, SQL, TensorFlow

Blockchain Bitcoin, Lightning Network

Machine learning linear regression, polynomial regression, anomaly detection, recommender systems, support vector machines, neural networks

Soft skills

Team work
Event organisation
Teaching
Problem solving
Scientific research

Publications

Peer-reviewed

S. Kuhlmann, G. Lehericy, *A Baer-Krull theorem for quasi-ordered groups*,
Order, Volume 35, pages 283-291, ISSN 1572-9273, 2018,
DOI: 10.1007/s11083-017-9432-5

S. Kuhlmann, G. Lehericy, *The differential rank of a differential-valued field*,
Mathematische Zeitschrift, ISSN 1432-1823, 2018
DOI: 10.1007/s00209-018-2132-z

G. Lehericy, *A structure theorem for abelian quasi-ordered groups*,
Journal of Pure and Applied Algebra, Volume 223, pages 3238 - 3261, 2019
DOI: 10.1016/j.jpaa.2018.10.016

G. Lehericy, *On the structure of groups endowed with a compatible C-relation*,
Journal of Symbolic Logic, Volume 83, pages 939-966, 2018,
DOI: 10.1017/jsl.2018.41

Accepted for publication

L.S. Krapp, S. Kuhlmann, G. Lehericy, *Strongly NIP almost real closed fields*

L.S. Krapp, S. Kuhlmann, G. Lehericy, *Ordered fields dense in their real closure and definable convex valuations*

Conference Publications

G. Lehericy, *Using asymptotic couples to define derivations on fields of generalized power series*,
Oberwolfach reports, volume 13, issue 4, 2016

Preprints

L.S. Krapp, S. Kuhlmann, G. Lehericy, *On Strongly NIP Ordered Fields and Definable Convex Valuations*
arxiv number: 1810.10377, 2019

C. Grunspan, R. Perez-Marco, G. Lehericy, *Ant routing scalability for the lightning network* (arxiv link [here](#))

Invited talks

November 2014 *Model-theoretic approach to a Galois theory for fields endowed with an operator*
seminar "Model theory"
Universität Konstanz

- November 2015 *Total quasi-orders and C-structures on abelian groups*
seminar "Model theory"
Universität Konstanz
- March 2016 *C-structures and quasi-orders on abelian groups*
"Joint annual Meeting of DMV and GAMM, Section 25: Algebra, logic and set theory", Technische Universität Braunschweig
- May 2016 *C-structures and quasi-orders on abelian groups*
"Model theory month in Münster: Conference", Universität Münster
- May 2016 *Classification of abelian C-groups using quasi-orders*
seminar "Groups and model theory"
Université Paris 7
- November 2016 *A Baer-Krull theorem for quasi-ordered groups*
seminar "Real Algebraic geometry"
Universität Konstanz
- December 2016 *Using asymptotic couples to define derivations on fields of generalized power series*
"Mini-Workshop: Surreal numbers, Surreal analysis, Hahn fields and derivations",
Mathematisches Forschungsinstitut Oberwolfach
- January 2018 *Hardy-type derivations on fields of generalized power series*
seminar "Ordered algebraic structures"
Université Paris 7
- January 2018 *Hardy-type derivations on fields of generalized power series*
seminar "Geometry"
University of Bordeaux
- June 2018 *Quasi-orders as a uniform approach to orders and valuations*
seminar of pure mathematics
HHU Düsseldorf
- June 2018 *Using quasi-orders to describe C-groups*
seminar "Model theory"
HHU Düsseldorf
- July 2018 *The differential rank of a differential-valued field*
Conference: "Donau-Rhein Modelltheorie und Anwendungen", Universität Basel
- July 2018 *Classification of C-minimal groups using quasi-orders*
Logic Colloquium, Università degli Studi di Udine
- January 2019 *On the structure of C-minimal groups*
Workshop on NIP and groups, University of Leeds
- April 2019 *Scalability of ant routing*
Finance seminar
ESILV
- May 2019 *Estimating the capacity of the ant routing algorithm for the lightning network*
Paris cryptofinance seminar
Université Paris 7

Attended scientific events

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- January 2015 *British postgraduate model theory conference*
University of Oxford
- April 2015 *Model theory, partial differential equations and applications*
CIRM, Luminy
- June 2015 *Workshop: o-minimality and applications*
Universität Konstanz
- September 2015 *Mini-symposium: well-quasi-orders, from theory to applications*
DMV-annual meeting 2015, Hamburg
- October 2015 *Ordered algebraic structures and their interactions*
CIRM, Luminy.
- March 2016 *Joint annual Meeting of DMV and GAMM, Section 25: "Algebra, logic and set theory"*
Technische Universität Braunschweig
- April-May 2016 *Model theory month in Münster*
Universität Münster
- June 2016 *Model theory and fields : derivations, orders and valuations. Colloquium in honor of Françoise Delon.*
Université Paris 7
- July 2016 *Summer school in tame geometry*
Universität Konstanz
- December 2016 *Mini-Workshop: Surreal numbers, Surreal analysis, Hahn fields and derivations*
Mathematisches Forschungsinstitut Oberwolfach.
- January 2018 *Research School Model Theory, Combinatorics and Valued Fields*
CIRM, Luminy
- January-March 2018 *Trimester: Model Theory, Combinatorics and Valued fields, A trimester at the Institut Henri Poincaré*
IHP, Paris
- July 2018 *Summer school FoPSS "Logic and Learning"*
University of Oxford
- July 2018 *Donau-Rhein Modelltheorie und Anwendungen*
Universität Basel
- July 2018 *Logic Colloquium*
Universita degli Studi di Udine
- September 2018 *Workshop: From permutation groups to model theory*
ICMS, Edinburgh
- October 2018 *Conference "Real Algebraic Geometry and Model Theory"*
Universität Konstanz
- January 2019 *Workshop on NIP and groups*
University of Leeds
- May 2019 *Tokenomics conference*
École Normale Supérieure, Paris

June 2019 Conference “*Model Theory of Valued Fields and Applications*”
University of Münster

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