Guillaume GEOFFROY

Ph.D. in mathematics

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Personal data

Guillaume Jean-Jacques Geoffroy, born in 1992 in Le Chesnay (Yvelines, France), French nationality.

Current position

Since 09/2019 **Post-doc** at the departement of computer science and engineering of the university of Bologna (research project DIAPASoN – Differential Program Semantics).

Past positions

2018 – 2019 **ATER** at I2M (Institut de Mathématiques de Marseille).

Education

2015 – 2019 **Ph.D. in mathematics**, Aix-Marseille University. *Classical realizability: new tools and applications*. Advisor: Laurent Regnier. Defended on 29 March 2019.

2011 – 2015 **École Normale Supérieure diploma**, École Normale Supérieure, Paris. Major: mathematics, minor: computer science.

2013 – 2014 **Research Master (M2)**: Mathematical Logic and Foundations of Computer Science (LMFI), Paris Diderot University, École Normale Supérieure, Paris. With honours (Mention très bien).

2011 – 2013 University degree (L3 and M1) in mathematics, École Normale Supérieure, Paris.

2009 – 2011 CPGE (2-year program preparing for entry exams to engineering schools), Lycée Louis le Grand, Paris. Admitted to École Normale Supérieure, group MPI, rank 23rd.

2009 High-school diploma (baccalauréat général), scientific option, Lycée Évariste de Parny, Saint Paul (La Réunion, France). With honours (mention très bien, avec les félicitations du jury).

Internships

2014 Research internship, Universidad de la República, Montevideo (Uruguay). *Classical realizability in set theory: an example with the model of threads*. Advisor: Alexandre Miquel.

Research

Peer-reviewed publications

Laura Fontanella, Guillaume Geoffroy. *Preserving cardinals and weak forms of Zorn's lemma in realizability models*. Accepted with minor revisions in Mathematical Structures in Computer Science. Revised version under review.

01/2021 Guillaume Geoffroy, Paolo Pistone. *A Partial Metric Semantics of Higher-Order Types and Approximate Program Transformations*. CSL 2021: 29th EACSL Annual Conference on Computer Science Logic.

07/2018 Guillaume Geoffroy. *Classical realizability as a classifier for nondeterminism*. LICS 2018: Thirty-First Annual ACM / IEEE Symposium on Logic in Computer Science.

Ph.D. thesis

03/2019 Guillaume Geoffroy. *Classical realizability: new tools and applications*. Ph.D. thesis.

Publications in preparation

Guillaume Geoffroy. *Extensional denotational semantics of Higher-order probabilistic programs, beyond the discrete case*.

Selected Talks

11/2020 *Denotational semantics of probabilistic programs, beyond the discrete case*, ANR PPS meeting.

09/2018 *Connecting degrees of parallelism and Boolean algebras through classical realizability*, CHoCoLa.

07/2018 *Classical realizability as a classifier for nondeterminism*, LICS 2018.

Scientific meetings

06/2018 *Realizability in Marseille*, co-organiser (with Laura Fontanella).

Science popularisation

Co-founder of Pi Day association (www.piday.fr).

2015 – 2017 President of Pi Day association.

14 March 2017 Co-author (with Joël Cohen) of the mathematical musical *From Marseille to Vegas* and co-organiser of the Pi Tour: three performances of the musical in Paris (théâtre des Variétés), Lyon (le Transbordeur) and Marseille (le Silo), accompanied by short scientific talks (attendance: 2000). Videos: http://www.piday.fr/extraits-video-2017/.

14 March 2016 Co-author of the mathematical musical *Les π travaux d'Archimède* and co-organiser of Pi Day in Marseille: one performance of the musical, accompanied by short scientific talks (attendance: 700). The association received the 2016 d'Alembert Award of the French Mathematical Society for this action.

Teaching

2020 Algorithms and data structures (40h, lab and TA, undergrad).

2018 – 2019 ATER at Aix-Marseille University (192h per year). Linear algebra; methodology; mathematical reasoning (1st year university – L1); C and systems programming (1st year university – L1); research initiation workshops (high school).

2015 – 2018 Teaching assistant (chargé de mission d'enseignement) at Aix-Marseille University (64h per year). Introductory analysis; algebra and geometry (1st year university – L1); C programming (1st and 2nd year university – L1 & L2); logic and computability (graduate course – M2); research initiation workshops (high school).

Languages

French (native), English, Italian, Spanish.

2017 – 2018 Organiser of *Café des langues de Luminy*, daily multilingual student language exchange group.