Édouard Bonnet

School of Science and Technology
Department of Computer Science
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Personal

Born on May 31, 1989.

French citizen.

Post-doctoral researcher.

Education

January 2017-: Postdoc with Panos Giannopoulos, at Middlesex University, London.

January 2015-December 2016: Postdoc with Dániel Marx, at the Institute for Computer Science and Control of the Hungarian Academy of Sciences, Budapest.

October 2011-December 2014: PhD student in LAMSADE, directed by Vangelis Th. Paschos and Bruno Esco□er, Paris-Dauphine University (PhD defended on November 20). Jury: Christoph Dürr, Henning Fernau (reviewer), Klaus Jansen (reviewer), Dieter Kratsch, and Claire Mathieu (chair).

2010-2011: Master degree in computer science in MPRI (Parisian Master of Research in Computer Science). MPRI is considered as the strongest master in computer science in France.

2008-2010: Undergraduate studies in ENS Cachan (a highly selective school accessible by "concours")

Research interests

Algorithms, Parameterized Complexity, Lower Bounds, Approximation, Game Complexity.

Publications

International Conferences

18. *An Approximation Algorithm of the Art Gallery Problem*, with Tillmann Miltzow (SoCG 2017).
17. *Fine-grained complexity of coloring unit disks and balls*, with Csaba Biró, Dániel Marx, Tillmann Miltzow, and Paweł Rzążewski (SoCG 2017).
16. *Complexity of Token Swapping and its Variants*, with Tillmann Miltzow and Paweł Rzążewski (STACS 2017).
15. *Parameterized Hardness of Art Gallery Problems*, with Tillmann Miltzow (ESA 2016).
14. *Fixed-parameter Approximability of Boolean MinCSPs*, with László Egri and Dániel Marx (ESA 2016).
13. *Parameterized vertex deletion problems for hereditary graph classes with a block property* with Nick Brettell, O-joung Kwon, and Dániel Marx (WG 2016).

12. *The Complexity of Playing Durak* (IJCAI 2016).
11. *Time-Approximation Trade-offs for Inapproximable Problems*, with Michael Lampis and Vangelis Th. Paschos (STACS 2016).
10. *A 0.821-ratio purely combinatorial algorithm for maximum k-vertex cover in bipartite graphs*, with Bruno Esco□er, Vangelis Th. Paschos, and Georgios Stamoulis (LATIN 2016).
9. *The Graph Motif problem parameterized by the structure of the input graph*, with Florian Sikora (IPEC 2015).
8. *On the Complexity of Grundy Coloring and its Variants*, with Florent Foucaud, Eunjung Kim, and Florian Sikora, (COCOON 2015).
7. *Slither, a Similar yet Different Connection Game*, with Florian Jamain and Abdallah Sa□dine (ACG 2015).
6. *On the Complexity of Various Parameterizations of Common Induced Subgraph Isomorphism*, with Faisal N. Abu-Khzam and Florian Sikora (IWOCA 2014).
5. *On the Complexity of General Game Playing*, with Abdallah Sa□dine (CGW 2014).
4. *On Subexponential and FPT-time Inapproximability*, with Bruno Esco□er, Eunjung Kim and Vangelis Th. Paschos (IPEC 2013).
3. *Multi-parameter complexity analysis for constrained size graph problems: using greediness for parameterization*, with Bruno Esco□er, Vangelis Th. Paschos and Émeric Tourniaire (IPEC 2013).
2. *On the Complexity of Trick-Taking Card Games*, with Florian Jamain and Abdallah Sa□dine (IJCAI 2013).
1. *Havannah and TwixT are PSPACE-complete*, with Florian Jamain and Abdallah Sa□dine (CG 2013).

International Journals

9. *The Graph Motif problem parameterized by the structure of the input graph*, with Florian Sikora (DAM 2016).
8. *Multiparameterizations for max k-set cover and related satisfiability problems*, with Vangelis Th. Paschos and Florian Sikora (RAIRO-ITA 2016).
7. *Sparsification and subexponential approximation*, with Vangelis Th. Paschos (Acta Informatica 2016).
6. *On the Complexity of Connection Games*, with Florian Jamain and Abdallah Sa□dine (TCS 2016).
5. *Dual parameterization and parameterized approximability of subset graph problems*, with Vangelis Th. Paschos (RAIRO 2016).
4. *A note on Edge Isoperimetric Numbers and Regular Graphs* with Florian Sikora (IJFCS 2016).
3. *Multi-parameter complexity analysis for constrained size graph problems: using greediness for parameterization*, with Bruno Esco□er, Vangelis Th. Paschos and Émeric Tourniaire (Algorithmica 2015).
2. *On Subexponential and FPT-time Inapproximability*, with Bruno Esco□er, Eunjung Kim and Vangelis Th. Paschos (Algorithmica 2015).
1. *Parameterized (in)approximability of subset problems*, with Vangelis Th. Paschos (ORL 2014).

Manuscripts

1. *Flip Distance to a Non-crossing Perfect Matching*, with Tillmann Miltzow, CoRR 2016.
2. *Complexity of games*, (in french) with Abdallah Sa□dine, ROADEF bulletin, January 2014. Invited.
3. *Generalized feedback vertex set problems on bounded-treewidth graphs: chordality is the key to single-exponential parameterized algorithms*, with Nick Brettell, O-joung Kwon, and Dániel Marx.
4. *The Importance of Rank in Trick-Taking Card Games*, with Abdallah Sa□dine.
5. *The Parameterized Complexity of Positional Games*, with Serge Gaspers, Antonin Lambilliotte, Stefan Rümmele, and Abdallah Sa□dine.
6. *On the complexity of RNA design extension*, with Paweł Rzążewski and Florian Sikora.

Talks

February 2017: *Fine-grained complexity of coloring unit disks and balls*, group seminar, Durham.

January 2017: *Fine-grained complexity of coloring unit disks and balls*, group seminar, London.

December 2016: *Fine-grained complexity of coloring unit disks and balls*, group seminar, Lyon.

October 2016: presentation of the paper of Hales, Manuch, Ponty, and Stacho *Combinatorial RNA Design: Designability and Structure-Approximating Algorithm*, weekly seminar on parameterized complexity, Budapest.

August 2016: *Fixed-parameter Approximability of Boolean MinCSPs*, at ESA, Aarhus (Denmark).

August 2016: *Parameterized Hardness of Art Gallery Problems*, at ESA, Aarhus (Denmark).

August 2016: *Fixed-parameter Approximability of Boolean MinCSPs*, weekly seminar on parameterized complexity, Budapest.

July 2016: *The Complexity of Playing Durak*, at IJCAI, New York.

June 2016: presentation of the paper of Fomin, Gaspers, Lokshtanov, and Saurabh *Exact Algorithms via Monotone Local Search*, weekly seminar on parameterized complexity, Budapest.

April 2016: *Parameterized hardness of Art Gallery problems*, at EuroCG, Lugano.

March 2016: *Flip Distance to a Non-crossing Perfect Matching*, at EuroCG, Lugano.

March 2016: *TikZ in 10 minutes*, weekly seminar, special edition on tools, Budapest.

November 2015: *The parameterized hardness of Art Gallery problems*, weekly seminar on parameterized complexity, Budapest.

October 2015: *On the Complexity of Grundy Coloring and Its Variants*, weekly seminar on parameterized complexity, Budapest.

September 2015: *The Graph Motif problem parameterized by the structure of its input graph*, at IPEC, Patras (Greece).

August 2015: *On the Complexity of Grundy Coloring and Its Variants*, at COCOON, Beijing.

July 2015: *Super-polynomial Time Approximability of Inapproximable Problems*, weekly seminar on parameterized complexity, Budapest.

April 2015: *Super-polynomial Time Approximability of Inapproximable Problems*, seminar AlGCo, LIRMM, Montpellier.

November 2014: *Positive and Negative Results in Approximation and Parameterized Complexity*, PhD defense, Paris-Dauphine University.

September 2014: *On the Complexity of Grundy Coloring and its Variants*, doctoral seminar of LAMSADE, Paris.

June 2014: *On the Parameterized Complexity of Cardinality-Constrained Problems in Bipartite Graphs*, at Jussieu, Paris.

October 2013: *On the Complexity of Games*, doctoral seminar of LAMSADE, Paris.

September 2013: *On Subexponential and FPT-time Inapproximability*, at IPEC, Antibes (France).

September 2013: *Using Greediness for Parameterization*, at IPEC, Antibes (France).

May 2013: *Using Greediness for Parameterization*, at ECCO, Paris.

April 2013: *More Bridge Complexity*, day of LAMSADE, Paris.

February 2013: *An Introduction to the Chomsky Hierarchy*, seminar of LAMSADE, Paris.

February 2013: *Balance between time Complexity and Approximation ratio*, at ROADEF, Troyes.

January 2013: *How easy is Bridge?*, doctoral seminar of LAMSADE, Paris.

September 2012: *On the Parameterized Complexity of Maximum and Minimum (k,n-k)-cut*, doctoral seminar of LAMSADE, Paris.

May 2011 : *Are Binary Idempotent Commutative Operations Tractable?*, CSP weekly seminar of LIX, Polytechnique.

Research visits and workshops

March/April 2016: attended EuroCG 2016, in Lugano (Switzerland).

October 2015: attended workshop GROW 2015, in Aussois (France).

June 2015: attended workshop WorKer 2015, in Nordfjordeid (Norway).

July 2014: invited at LIRMM for a week, worked with Marin Bougeret and Rémi Watrigant, in Montpellier (France).

April 2013: attended workshop WorKer 2013 on kernelisation (parameterized complexity), in Warsaw.

April 2012: attended spring school on PL-based methods for approximation (lecturer: David Shmoys and David Williamson) followed by the conference ISCO, in Athens.

Internships

On the tractability of binary idempotent commutative polymorphisms, with Manuel Bodirsky and Michael Pinsker (LIX), Paris, 2011.

On topological properties of non-deterministic infinite tree languages, with Jacques Duparc (UNIL), Lausanne, 2010.

On the propagation of some constraints, with Christian Bessière (LIRMM), Montpellier, 2009.

Service

Reviewer or subreviewer for journals and conferences,
Journals:

TCS, Theoretical Computer Science (9 reviews)

Conferences:

CIAC, International Conference on Algorithms and Complexity (4 reviews)

ESA, European Symposium on Algorithms

FUN with algorithms

ICALP, International Colloquium on Automata, Languages and Programming (2 reviews)

ISCO, International Symposium on Combinatorial Optimization

MFCS, Mathematical Foundations of Computer Science

SODA, Symposium on Discrete Algorithms

WADS, Algorithms and Data Structures Symposium

WALCOM, International Workshop on Algorithms and Computation (2 reviews)

WG, International Workshop on Graph-Theoretic Concepts in Computer Science (2 reviews)

Posters

"The complexity of playing Durak", IJCAI 2016.

"On the complexity of trick-taking card games", IJCAI 2013.

Teaching

Practical and exercice sessions of algorithmics in Python in PSL^* L2 Semester 1, 2014.

Practical and exercice sessions of algorithmics in Python in PSL^* L1 and L2, 2013-2014.

Practical sessions of Python programming in PSL^* L1, 2012-2013.

Practical sessions of Java programming in Paris-Dauphine University, 2012-2013.

Full course of VBA programming in Paris-Dauphine University, 2012-2013.

Practical sessions of Caml programming in MP/MP*, Lycée Louis le Grand, 2011-2012.

Skills

Languages : French (native), English (fluent), Spanish (intermediate).

Programming languages : Python, OCaml, C/C++, Java, VBA, prolog.

Miscellaneous

Chess (former member of the National Junior Team, elected "Most promising french chessplayer" in 1999, Tied for second in World Championship Under 12, Europesa del Mar, 2001),

Bridge (former member of the National Junior Team).

Last updated: February 24, 2017