

Etienne Moutot

Résumé

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Education

- 2017- **ENS de Lyon (France) & University of Turku (Finland)**, *PhD in Computer Science and Maths*, supervised by N. Aubrun et J. Kari.
- 2015-2017 **Ecole Normale Supérieure de Lyon**, *Master in computer science*.
- 2014-2015 **Ecole Normale Supérieure de Lyon**, *BSc in computer science*.
- 2012-2014 **Lycée Marcelin Berthelot**, *Classes préparatoires MPSI, MP**, Option informatique.
- 2012 **Lycée François Mansart**, *Baccalauréat scientifique*, Maths and Engineering major.

Publications

- 2019 **Computational Limitations of Affine Automata**, with M. Hirvensalo et A. Yakarylmaz.
18th International Conference on Unconventional Computation and Natural Computation (UCNC2019)
- 2019 **Nivat's conjecture and pattern complexity in algebraic subshifts**, with J. Kari.
Theoretical Computer Science
- 2018 **Slopes of 3-dimensional Subshifts of Finite Type**, with P. Vanier.
13th International Computer Science Symposium in Russia (CSR2018)
- 2017 **On the computational power of affine automata**, with M. Hirvensalo and A. Yakarylmaz.
11th International Conference on Language and Automata Theory and Applications (LATA2017)

Teaching

- 2018-2019 **Practical session in Architecture, Systems, Network 2**, L3, ENS de Lyon.
Practical session in Project 2, L3, ENS de Lyon.
- 2017-2018 **Exercice session in Performance evaluation in networks**, M1, ENS de Lyon.
Exercice session in Computer science foundation, L3, ENS de Lyon.

Experience

Internships

- 2017 **The domino proble in surface groups**, Supervised by Nathalie Aubrun, LIP, ENS de Lyon, France.
http://perso.ens-lyon.fr/etienne.moutot/static/etudes/M2/stage/em2017_report.pdf

- 2016 **Affine automata, power and stability**, *Supervised by Mika Hirvensalo*, University of Turku, Finlande.
http://perso.ens-lyon.fr/etienne.moutot/static/etudes/M1/stage/em2016_report.pdf
- 2015 **Periodicity in tilings**, *Supervised by Pascal Vanier*, LACL, France.
http://perso.ens-lyon.fr/etienne.moutot/static/etudes/L3/stage/em2015_en.pdf.

Projects

- 2015-2016 **Integrated Project**, *Blend'it*, ENS de Lyon, France.
 One-year project that I led. With 8 other students, we tried to improve the open-source 3D software Blender. More precisely, to create automatically complex environments and animate huge crowds inside them.
 More: <http://perso.ens-lyon.fr/etienne.moutot/etudes/M1/pi.html>.
- 2013-2014 **School Project (TIPE)**, *Neural networks for character recognition*, Lycée Marcelin Berthelot, France.
 Implemented a general neural network in Python, and used it to create a basic character recognizer.
 More (in French): <http://perso.ens-lyon.fr/etienne.moutot/etudes/MP/TIPE.html>.

Conferences, talks and vulgarization

Talks in international conferences

- 06/2018 **CSR2018**, *Slopes of 3D subshifts of finite type*.
- 03/2017 **LATA2017**, *On the computational power of affine automata*.

Other talks

- 05/2019 **LACL, Créteil**, *Algebra, tilings and Nivat*.
- 06/2018 **Independent University of Moscow**, *Algebraic Subshifts and Nivats Conjecture*.
- 03/2018 **University of Turku**, *The domino problem on surface groups*.
- 03/2016 **Séminaire de la détente mathématique**, *Why Turing will never be able to choose how to tile his kitchen ?*.

Vulgarization

- 04/2019 **Activities "pôle sciences"**, activities around tilings for middle school students.
- 02/2019 **Talk at "Maison des Mathématiques et de l'Informatique"**, show about the notion of randomness for middle school.
- 12/2016 **Déclics**, discussions with high school students about the world of research.

Conference organization

- 09/2017 **Research school & Workshop on Aperiodicity and Hierarchical structures in tilings**, *ENS de Lyon*.
- 2015 **Opens Minders**, *ENS de Lyon*.
- 2015 **Vulgarizators**, *ENS de Lyon*.
 Scientific vulgarization conference, inviting french filmmakers from Youtube.
- 2015 **Sport-Études conferences**, *ENS de Lyon*.

Other

2014-2016 **Private lessons**, Maths, physics and computer science, high school and preparation to competitive exams for ENS.

2007-2014 **Courses reviewer**, *Le Site du Zéro (now Open Classrooms)*.

Computer skills

Advanced Python, \LaTeX , GNU/Linux

Intermediate C, C++, PHP, HTML/CSS, Adobe Photoshop, Adobe Première

Other

Languages French (Mother tongue), English (B2 level: conversationally fluent)

Activities Digital & analogue photography, improvisational theater, rock climbing, mountain biking