



# Florent Delgrange

*PhD Student in Computer Science and Mathematics*

## Education

- 2018 – present **Joint PhD (*cotutelle*)**, *Computer Science and Mathematics*, UMONS – Université de Mons, Belgium and RWTH Aachen University, Germany.
- 2016 – 2018 **Master of Science**, *Computer Science*, UMONS, Belgium.  
*Magna Cum Laude.*
- 2013 – 2016 **Bachelor of Science**, *Computer Science*, UMONS, Belgium.  
*Cum Laude.*

## Research Interests

- General Formal methods, verification, artificial intelligence, computer science, mathematics
- Focus Automated controller synthesis for stochastic systems, partially observable probabilistic systems, reinforcement learning, tool development.

## Professional experience

- 2017 **Internship**, *Nokia*, Antwerpen, Belgium.  
Machine learning for DSL lines troubleshooting.

## Honors

- 2019 **Best MIMA poster award (Mathematics, Computer Science, Modeling and Application)**, MdC 2019: Mardi des Chercheurs, UMONS.
- 2018 **Best 2018's Computer Science Master's thesis award**, UMONS.

## Publications

- [BDOR19] Thomas Brihaye, Florent Delgrange, Youssef Oualhadj, and Mickael Randour. Life is random, time is not: Markov decision processes with window objectives, 2019.

*Bâtiment de Vinci, Avenue Victor Maistriau, 19 – 7000 Mons (Belgium)*

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## Teaching

2018 – present **Teaching assistant, UMONS.**

- Formal methods for system design (CS and Maths: 4th and 5th year)
- Hands on AI – *University certificate in artificial intelligence for students and non university person* (CS and Engineers: 4th and 5th year)

2017 – 2018 **Student teaching assistant, UMONS.**

- Computer programming and algorithms I (CS and Maths: 1st year)  
*Language covered: Python 3*
- Computer programming and algorithms II (CS, Maths and Physics: 1st and 2nd year)  
*Language covered: Java 8*

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## Programming skills

Languages C, C++, Java, L<sup>A</sup>T<sub>E</sub>X, OCaml, Python, Prolog, Scala.

Libraries Scipy (scikit-learn, scikit-image, matplotlib, numpy), TensorFlow (Keras).

Tools Storm model checker, OpenAI gym.

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## Miscellaneous

2017 – 2018 **Master's thesis**

Title *Multi-objective synthesis in Markov decision processes*

Directors Véronique Bruyère & Mickael Randour

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2016 – 2017 **Master's project**

Title *Stochastic shortest path problems in Markov decision processes*

Directors Véronique Bruyère & Mickael Randour

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2016 **Research internship, Faculty of Science, Computer Science Department, UMONS.**  
*Software Engineering Service: statechart visualizer for Sismic library.*

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## Attended research events

2019 **SYNT Camp** (ETAPS workshop, *Prague, Czech Republic*), **LiVe: Learning in Verification** (ETAPS workshop, *Prague, Czech Republic*), **Theory and Algorithms in Graph and Stochastic Games** (workshop, *UMONS, Mons, Belgium*), **MdC: Mardi des Chercheurs** (scientific research event, *UMONS, Mons, Belgium*).

2018 **Highlights of logic, games and automata** (conference, *Technische Universität Berlin*), **MOVEP: Modeling and verification of parallel processes** (summer school, *ENS Paris-Saclay, Cachan, France*), **MoRe: Multi-objective reasoning in verification and synthesis** (FLoC workshop, *University of Oxford, UK*), **Logic and learning** (FoPSS summer school, *University of Oxford, UK*), **Logic and learning** (workshop, *The Alan Turing Institute, London, UK*).