

# Julie Dethier

37 rue Jonfosse  
4000 Liège - Belgium  
Born on June 26th 1986 in Liège, Belgium  
Tel: +32 (0)498 65 34 75  
E-mail: jdethier@ulg.ac.be  
Homepage: [www.montefiore.ulg.ac.be/~jdethier](http://www.montefiore.ulg.ac.be/~jdethier)



## Education

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2015	PhD in Engineering Sciences		Université de Liège
2014-2015	Doctoral research stay VSRC		Princeton University
2011-2015	PhD candidate Research fellow F.R.S-FNRS		Université de Liège
2010-2011	Master of Science in Bioengineering		Stanford University
2010	Master of Biomedical Engineering	<b>Summa cum laude</b>	Université de Liège
2009-2010	2 <sup>nd</sup> year of Master's degree in Biomedical Engineering	<b>Summa cum laude</b>	Université de Liège
2008-2009	1 <sup>st</sup> year of Master's degree in Biomedical Engineering	<b>Summa cum laude</b>	Université de Liège
2008	Bachelor of Engineering	<b>Summa cum laude</b>	Université de Liège
2007-2008	3 <sup>rd</sup> year of Bachelor's degree in Engineering	<b>Summa cum laude</b>	Université de Liège
2006-2007	2 <sup>nd</sup> year of Bachelor's degree in Engineering	<b>Summa cum laude</b>	Université de Liège
2005-2006	1 <sup>st</sup> year of Bachelor's degree in Engineering	<b>Magna cum laude</b>	Université de Liège

## Experiences

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2014-2015	One-year research stay in <b>Princeton University, USA.</b>
2013-2014	Numerous research stays in <b>Cambridge University, UK.</b> <b>Teaching-Assistant</b> for « Travaux pratiques en génie biomédical ». <b>Committee member</b> to train students to defend a FRIA doctoral fellowship. <b>Member</b> of the Faculty Council. Participation to a <b>Doc'café</b> , a meeting between researchers and a large audience in a friendly and relaxed setting.
2012-2013	<b>Teaching-Assistant</b> for « Travaux pratiques en génie biomédical ». <b>Teaching-Assistant</b> for « Analyse et synthèse des systèmes ». <b>Supervision of a master's thesis</b> on recording and analysis of pathological rhythms in Parkinson's disease patients.
2011-2012	<b>Teaching-Assistant</b> for « Analyse et synthèse des systèmes ».
2010-2011	<b>Laboratory project</b> in the « Brains in Silicon » lab, Stanford University. Design of a cortical brain-machine interface decoder with a spiking neural network. <b>« Cooler » project</b> for « Biodesign for Innovation », Stanford University. Design of a vaccine carrier box for use in rural India. <b>« Synchrony » project</b> for Prof. Boahen for « Large-scale neural modeling ». Implementation of a spiking neural network on a neuromorphic chip.
2009-2010	<b>Master's thesis project</b> at Imec, Leuven, Belgium: « Design for a multi-channel recording and stimulation device ». <b>Student-Assistant</b> for « Analyse et synthèse des systèmes ».

- 2008-2009 **Student-Assistant** for « Introduction aux processus stochastiques ».  
 « **Bobby** » **project** for Prof. Boigelot for « Systèmes programmés enfeus ».  
**Student-Assistant** for « Modélisation et analyse des systèmes ».  
**Student-Assistant** for « Algèbre ».
- 2007-2008 **Student-Assistant** for « Electronique numérique ».  
 « **View Calculator** » **project** for Prof. Destiné for « Electronique numérique » –  
 project selected for presentation to high school students.  
**Student-Assistant** for « Modélisation et analyse des systèmes ».  
**Student-Assistant** for « Analyse mathématique ».  
**Student-Assistant** for « Circuits électriques ».
- 2004-2005 **AFS Exchange Program** in Pennsylvania, USA – 1 year in high school.

## Prices and Honors

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- 2014 **WBI-World Excellence Fellowship** for research stay in Princeton University.  
 Article in the «**15e jour du mois**», monthly magazine of ULg.
- 2013 **LEAR Foundation** Fellowship for research stays in Cambridge University.  
 Elected in the **20 emerging creative Walloons of 2013** by TALK magazine.  
**Audience Award** at the «Ma thèse en 180 secondes» contest, ULg final.
- 2012 **Invited speaker** – LIEGE CREATIVE conference.
- 2011 **2<sup>nd</sup> Best Poster Award** – Symposium of the IEEE EMBS Benelux Chapter.  
 National Fund for Scientific Research Fellowship – **FNRS**.  
**Speaker** – Stanford Bioengineering Department Commencement Ceremony.  
**Margareta Van Beneden** Fellowship.
- 2010 **B.A.E.F.** Fellowship.  
**Fulbright** Honorary Fellowship.  
**Rotary International**, District Fellowship.  
 AILg **Best Master's Thesis** Price, EVS Broadcast Equipment.
- 2009 **Pisart** Study Grant for Foreign Languages.
- 2005 **Pisart** Study Grant for University Entrance.

## Publications

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- 2015 **PhD thesis:** *The role of feedback in maintaining robustness and modulation across scales: Insights from cellular and network neurophysiology*, September 2015. Advisor: Prof R. Sepulchre  
 G Drion, A Franci, **J Dethier**, and R Sepulchre, Dynamic Input Conductances Shape Neuronal Spiking, *eNeuro*, 2015.  
**J Dethier**, G Drion, A Franci, and R Sepulchre, A Positive Feedback at the Cellular Level Promotes Robustness and Modulation at the Circuit Level, *Journal of Neurophysiology*, Accepted for publication.
- 2013 **J Dethier**, G Drion, A Franci, and R Sepulchre, Impacts of a unicellular mechanism on network behaviors, *32nd Benelux Meeting on Systems and Control*, 2013.  
**J Dethier**, P Nuyujukian, S I Ryu, K V Shenoy, and K Boahen, Design and validation of a real-time spiking-neural-network decoder for brain-machine interfaces, *Journal of Neural Engineering*, 10, 036008, 2013.
- 2012 **J Dethier**, D Ernst, and R Sepulchre, Neuromorphic reinforcement learning, *31st Benelux Meeting on Systems and Control*, 2012.  
**J Dethier**, P Nuyujukian, C Eliasmith, T Stewart, S A Elassaad, K V Shenoy, and K Boahen, A brain-machine interface operating with a real-time spiking neural network control algorithm, *Advances in Neural Information Processing Systems 24*, Curran Associates, Inc., pp. 2213-21, 2012.
- 2011 **J Dethier**, V Gilja, P Nuyujukian, S A Elassaad, K V Shenoy, and K Boahen, Spiking neural network decoder for brain-machine interfaces, *IEEE EMBS Conference on Neural Engineering*, IEEE Press, pp. 396-9, 2011.

2010 **Master thesis:** *Design for a multi-channel recording and stimulation device*,  
June 2010. Advisor: Prof J. Destin 

## Skills

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### Languages:

French (Native language) – English (Fluent – PBT TOEFL 2008 total score:  
670/677) – Dutch (High school level)

### Informatics:

Matlab, Python, Nest, Nengo, Java, C++, R, VHDL, Assembleur  
Word, PowerPoint, Latex

### Leadership:

Designer of the “the PhD” concept, PhD students discussions	2013-2014
IEEE Student Branch of Li�ge - <b>Chair</b>	2009-2010
Girl Scout <b>Captain</b> - 25 <sup>th</sup> Scout Group, Li�ge	2005-2008
<b>Responsible Captain</b> - 25 <sup>th</sup> Scout Group, Li�ge	2006-2008
Student Class Representative (Saint-Barth�lemy, Li�ge, Belgium)	2002-2004

## Hobbies

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### Foreign Experiences:

One year research stay in Princeton University, New Jersey, USA  
Master’s degree and laboratory work in Stanford University, California, USA  
One year exchange program in Stroudsburg, Pennsylvania, USA  
Exchange stays in the Netherlands, England, and Sweden

### Miscellaneous:

Competitive Swimming, Li�ge Mosan Club	1999-2004
Competitive Swimming at Stroudsburg High school	Swim Team in 04-05
Running, Tennis, Playing guitar	