

# Gabriel Urbain

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## EXPERIENCE

### **UGENT | PHD STUDENT - RESEARCH ASSISTANT AT THE IDLAB - IMEC**

October 2015 - Present | Ghent, Belgium

Topic: *Brain-inspired CPG architectures for robust locomotion learning on quadruped robots.*

Human Brain Project. Neurorobotics branch.

### **UMONS | RESEARCHER AT THE NUMEDIART INSTITUTE**

February - October 2015 | Mons, Belgium

Topic: *Development of a Search Engine Based on Audio Similarities for Large Collections of Foley Sounds.*

Research in partnership with Dame Blanche SA and CETIC. The produced algorithm is currently in the process of patenting.

### **THALES ALENIA SPACE | RESEARCH AND INNOVATION INTERNSHIP**

August - September 2013 | Charleroi, Belgium

Topic: *Feasibility Analysis of an Electro-Mechanical Control System for Ariane Rocket Boosters.* Supervisor: Prof. Dr. Marc Bekemans.

### **UMONS | RESEARCH INITIATION INTERNSHIP**

July - August 2011 | Mons, Belgium

Topic: *Semi-Automatic Creation of a 3D Model for the City of Mons.* Supervisor: Prof. Dr. T. Dutoit. IT Cluster

### **UMONS | RESEARCH INITIATION INTERNSHIP**

July - August 2010 | Mons, Belgium

Topic: *Implementation of C/C++ Libraries in TRNSYS 16.1 for Heat Pump Study.* Supervisor: R. Lepore. Energy Cluster

## EDUCATION

### **MASSACHUSETTS INSTITUTE OF TECHNOLOGY**

#### **MASTER PROJECT AT THE SPACE SYSTEMS LABORATORY**

June 2014 - November 2014 | Cambridge, USA

Topic: *Calibration and Fusion of Stereoscopic and Time-of-Flight Cameras for Zero Gravity Targets Inspection.* Supervisor: Dr. Alvar Saenz-Otero. Passed with the highest mention.

### **ISAE | SUPAERO**

#### **MASTER OF SCIENCE IN AEROSPACE ENGINEERING**

August 2012 - November 2014 | Toulouse, France

Double Master Degree through T.I.M.E. Network. Major : Space Systems, Telecommunications and Networks.

### **UMONS | FACULTÉ POLYTECHNIQUE**

#### **MASTER OF SCIENCE IN ELECTRICAL ENGINEERING**

September 2011 - November 2014 | Mons, Belgium

Major: Multimedia et Telecommunications. Graduated with Honors.

#### **BACHELOR OF SCIENCE IN ENGINEERING**

September 2008 - June 2011 | Mons, Belgium

Graduated with Honors.

## PUBLICATIONS IN JOURNALS AND CONFERENCES

**Morphological Properties of Mass-Spring Networks for Optimal Locomotion Learning.**  
G. Urbain, J. Degraeve, B. Carette, F. Wyffels and J. Dambre. In *Frontiers in Neurorobotics*. 2017

**A Semantic and Content-Based Search User Interface for Browsing Large Collections of Foley Sounds.**

G. Urbain, C. Frisson, A. Moinet and T. Dutoit. In: *Audio Mostly - A conference on interaction with sound*. 2016

**INSPECT Sensor Suite for On-Orbit Inspection and Characterization with Extravehicular Activity Spacecraft.**

D. Steinberg, T. Sheerin and G. Urbain. In: *45th International Conference on Environmental Systems*. 2015

## WORKSHOPS - SYMPOSIUMS

**4th HBP School | Future of Artificial Intelligence**

Lightning talk and poster session. June 2017, Obergurgl, Austria.

**1st Neurorobotics Platform User Workshop**

April 2017, Munich, Germany.

**3rd HBP School | Future of Neuroscience**

Lightning talk and poster session. December 2016, Obergurgl, Austria.

**4th HBP Education Workshop | Future of Computing**

Lightning talk and poster session. January 2016. Manchester, UK.

**5th Cubesat Symposium and the 6th QB50 Workshop**

Lightning talk and poster session. June 2013. Brussels, Belgium.

## IT SKILLS

### SOFTWARE

**Operating Systems | Middleware**

Linux • Embedded Linux • Windows • ROS

**Programming**

C • C++ • Python • Matlab • Simulink • Java • Bash • VHDL • OpenCV • Git •  $\LaTeX$

**Embedded Platforms**

Low-level development on: X86 • Atmel AVR (Arduinos, self-designed boards) • ARM (BeagleBone, RaspberryPI, Odroid) • Neuromorphic Hardware (SpiNNaker, BrainScaleS)

### TECHNICAL

Embedded Systems • Image and Audio Processing • Neural Networks • Machine Learning • Robotics • Electronics • Telecommunications • Space Systems

## LANGUAGES

**French** | Native. C2

**English** | Fluent. C1. TOEFL IBT 105/120 in 2014

**Dutch** | Medium. B2

**Spanish** | Basic. A2

## ASSOCIATIVE LIFE

### HUMAN BRAIN PROJECT (HBP) | STUDENT REPRESENTATIVE

2016 - Present | Brussels, Belgium

Student ambassador in the HBP Neurorobotics branch (2016, 2017) and elected Student Representative at the HBP Education Programme Committee until May 2019.

### IROBOTIQUE | ADMINISTRATOR

2004 - Present | Mons, Belgium

Class on electronics, microprocessor programming and robotic design. Participation to Eurobot Junior (2005, 2006, 2008) and Eurobot (2011, 2013) with multiple rewards: Creativity Award (2006), Belgian Junior Champions Award (2008), 8th European Junior position (2008), 7th European position (2013). Design and development of robotic platform for museum guided tours since 2014.

### MUSEOMIX BELGIUM | ADMINISTRATOR AND ORGANISER

2015 - Present | Brussels, Belgium

Organization of hackatons and events confronting people from technological and cultural backgrounds to define the future of museum mediation in Belgium. Communication and website manager.

## ART AND CAMPUS ACTIVITIES

Gent Universitair Symphonisch Orkest (2016-2017) • Sailing (2014) • CubeSat (2012-2014) • Scuba Diving (2013-2014) • Supaero Jazz Band (2012-2014) • Rowing (2013) • Winner of a GDF Suez scholarship (2012) • Student Culture Committee (2010-2011) • Student Regional Committee (2009-2012) • Board of Faculty (2011-2012) • Auto-evaluation Commission (2011-2012) • Board of Libraries (2010-2011) • Jazz Band Baudour (2001-2011) • Drums • Trumpet • Piano • Choral