

Auton Lab
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MATHIEU GUILLAME-BERT

Education

- 2012-Present ▶ **Post Doctoral Fellow**
"Learning temporal models to forecast instability in intensive care patients"
Under the supervision of Artur Dubrawski
AutonLab – Carnegie Mellon University – USA
- 2009-2012 ▶ **PhD in Applied Mathematics and Computer Science**
"Learning temporal association rules on Symbolic time sequences"
Under the supervision of James L. Crowley
Committee: Pr. Malik Ghallab, Pr. Paul Lukowicz, Dr. Artur Dubrawski, Pr. Augustin Lux
PRIMA Team – INRIA Lab. – Grenoble - France
- 2008-2009 ▶ **MSc in Advanced Computing**
Imperial College – London – United Kingdom
- 2006-2008 ▶ **Student Engineer in ENSIMAG**, first and second year
National Superior School of Computer Science and Applied Mathematics
- 2004-2006 ▶ **Preparatory classes for French "Grande Ecoles"**
PCSI-SI and PSI* (Physics, Mathematics and Engineering Science)
Déodat de Séverac – Toulouse - FRANCE
- 2004 ▶ **French Baccalaureate** – with honours - Lycée Bourdelle – Montauban - FRANCE

Experiences/Projects

- 2014 ▶ **Research and development on two bed side monitoring devices to detect post surgery internal bleeding and forecast upcoming instability periods of ICU patients.**
Project in cooperation with CMU, Pitt. University and Edward Medical Group.
- ▶ **Design and development of a signal processing programming language (Event Script) and signal visualization software (Event Viewer)**
Fast prototyping and visualization framework, with high level operators and novel programming paradigm. Have been used on many large datasets, including real time market values and clinical patient vital signs. Implemented in C++ and Java.
- ▶ **Development and distribution of TITARL**
Framework including a data-mining and a machine learning algorithm to analyze and create forecasting models on temporal datasets.
- ▶ **Participation of the 2014 Pittsburgh coding for charity**
Finding optimal routing for a float of vehicles to bring children to school while minimizing waiting time and cost. Implementation of a complete and functional solution in 1.5 days in a team of five peoples.
- ▶ **Design and development of social network for pet owners**
Nac Sitter – <http://nac-sitter.com/>
- 2012 ▶ **Design, development and selling of a survival cooperative sandbox video game**
Build and Defend – <http://buildanddefend.com/>

My task include: game design, programming, sound design, graphic design, story design, web admin, article redaction, video host and video editing.

- ▶ **Design and development of a social web network**
Vivons ici ("Let's live here") – <http://vivons-ici.fr>
- 2011 ▶ **Talk on "Symbolic Temporal Data Mining" to the 2011 Winter Seminar**
- 2009 ▶ **First-order Logic Learning in Artificial Neural Networks**
Imperial distinguished MSc project – Publication in IJCNN-WCCI2010
Under the supervision of Krysia Broda and Artur d'Avila Garcez
- 2008 ▶ **Hybridization between GPS and low cost MEMS sensors for land vehicles**
Study and Development of a solution – Engineer school project in company (Datechsys)
- 2008 ▶ **Implementation of a I-Term unifier as Bs.C final project**
Under the supervision of Ricardo Caferra and Nicolas Peltier – LIG
- 2007 ▶ **Realization of a tool for scientific work presentation**
Creation of an algorithm for graph generation and design of a web Java-Php interface for the thesis of C.U. Aon (ชอบใจ ชั่น) on ambiguity of automated machine language translation.
- ▶ **Design and maintenance of the web site « Les Anciens de Déodat »** (Alumni of Déodat)
- ▶ **Participation to VisioMip 2007** – Computer vision – IRIT - Toulouse
- 2006 ▶ **TIFE : Theoretic and experimental study of a water based propeller**
Preparatory classes final project - Physical analysis and simulation (fluid mechanic and dynamic). Setup and use of a high speed camera (>1000 frames per second). Development of software of simulation and comparison with experimental data
- 2001-20012 ▶ **Design and development of many video games, tools et experimental software** in teams or in solo : B&D(2012), Shaab (2007), Robot's Moon (2006), Boomy (2006), Cronos Battle (2005), HokageNoJutsu (2004), Konak (2003), WormsRacer (2002), End World (2001), etc.
- ▶ **(old) Personal web site** : <http://hokage.no.jutsu.free.fr/Achoum>
- 2003 ▶ **Creation of a Basic to Asm compiler on TI83+**. Written in TI-Basic.
- ▶ **Programming of my first Operating System (POS)**. Written in Asm.
- 2002 ▶ **Work in a game development amateur team 'Media Fun Game'** in charge of the 3D engine.

Publications

- 2014 ▶ **Learning Temporal Rules to Forecast Events in Multivariate Time Sequences**
NIPS Workshop 2014 (Neural Information Processing Systems Foundation)
- ▶ **Utility of Empirical Models of Hemorrhage in Detecting and Quantifying Bleeding**
ESICM 2014 (European Society of Intensive Care Medicine)
- 2013 ▶ **Learning Temporal Rules to Forecast Instability in Intensive Care Patients**
ESICM 2013 (European Society of Intensive Care Medicine)
- ▶ **Learning Temporal Rules to Forecast Instability in Intensive Care Patients**
INFORMS Healthcare 2013
- ▶ **Artifact patterns in continuous noninvasive monitoring of patients**
INFORMS Healthcare 2013
- 2012 ▶ **Planning with Inaccurate Temporal Rules**
ICTAI 2012 - Mathieu Guillame-Bert and James L. Crowley
- ▶ **Learning Temporal Associative Rules on Symbolic Time Sequences**
ACML 2012 - Mathieu Guillame-Bert and James L. Crowley

- 2011
- ▶ **New Approach on Temporal Data Mining for Symbolic Time Sequences: Temporal Tree Associate Rules** – ICTAI 2011
Mathieu Guillame-Bert and James L. Crowley
 - ▶ **Predicting Home Service Demands from Appliance Usage Data**
ICTA 2011
Kaustav Basu, Mathieu Guillame-Bert, Hussein Joumaa, Stephane Ploix James Crowley
- 2010
- ▶ **First-order Logic Learning in Artificial Neural Networks** – IJCNN 2010
Mathieu Guillame-Bert, Krysia Broda and Artur d'Avila Garcez

Skills

- Tongue
- ▶ **French** : Mother tongue
 - ▶ **English** : Fluent (Living in UK and US for three years, PhD Thesis in English)
- Computer science
- ▶ **Systems** : Unix/Linux, Windows
 - ▶ **Programming language** : C/C++, Java, Python, R, Php, Asm, Html/Css, Visual Basic, Matlab, Scilab, Ada, Action script (Flash), Clips, Prolog.
 - ▶ **Special skills** : OpenGL, 3DSMax, Photo Shop and After Effects
- Driving licenses
- French and US