

Claude Nuttens

Data Scientist as PhD student in particle physics, my scientific education in the context of the CMS experiment at **CERN** developed my skills in **data analysis**, **software programming** and **international team** working. I have an **inquiring mind**, especially on new technologies, techniques and **data-related topics (analysis and visualization)**.

★★★★ French ★★★ English ★ Dutch

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💻 www.nuttenscl.be
👤 28 years old, married

📁 Experience

Data scientist, PhD student in particle physics

📍 CP3 (UCLouvain)
€ **FRIA Grant** (2011-2014)
📅 Sept. 2010- Dec. 2014

- **Data Analysis**: Search for new particles in the CMS experiment data, **CERN**
- Supervision and contact for the **simulation** in the CMS SiStrip tracker
- **International team** collaboration and **communication**
- Chairman/organisator of the research center seminars
- Representative for the institute scientific personnel
- Knowledge transmission and vulgarisation

Internship in CMS

📍 CERN
📅 August 2010

- Data analysis and algorithms improvements

📖 Education

Online Certifications

📍 Coursera
(Johns Hopkins University)
📅 Dec. 2014

- Courses part of the Data Science specialization by the Johns Hopkins University on Coursera
 - **R Programming**
 - The Data Scientist's Toolbox

PhD Student lectures

📍 UCLouvain
📅 2010- 2012

- Particle physics oriented
- BND graduate school in particle physics, Sept. 2011, Hoenderloo (NL)
- **Data-Mining** (introduction to data sampling, partitioning, pretreatment and validation - Variable analysis, reduction and transformation - Classification and modeling tools - Model validation and comparison)

MSc in physics

📍 UCLouvain
📅 2005- 2010

- Experimental physics oriented: Data-analysis, detectors, ...
- Thesis consisting in a CERN experiment data analysis

💻 Computer Skills

👉 Good, 👉 Medium, 👉 Notions, 👉 Superficial (low or old knowledge)

- Data Analysis & research related

C++ (Data Analysis), ROOT **Bash script** **Regex** **sed** **grep** **csvkit** **Open Source** **Command line**
python (ipython, numpy, matplotlib, scipy, pandas) **R** **SQL (MySQL, SQLite)** **Git** **JSON** **Excel** **awk** **jq**
Web scraping **Highcharts** **Matlab** **SAS Enterprise Miner** **Machine Learning** **D3.js, bokeh** **Geant4** **Tableau**
Neo4j & cypher **Hadoop** **MapReduce**

- Web development

php **JavaScript** **HTML5 & CSS3** **jQuery, jQuery Mobile** **Angular.js**

- Others

MS Word **Powerpoint** **OpenOffice/LibreOffice** **Linux** **LaTeX** **VIM** **perl** **Java** **VHDL** **Gimp** **Inkscape** **gnuplot**

🕒 Outside work interests

- Broaden my knowledge and keep my mind open to the outside
- Programming
- Running (~20km/week)
- Picture Editing

📣 Conferences

- Oral Presentations:
 - **Invited talk** at Vertex2013, Lake Starnberg (Germany), "Overview of the CMS Strip and Pixel detector", September 2013
 - Phenomenology symposium 2013, **Pittsburgh (US-PA)**, "Searches for Long-lived Charged Particles in pp Collisions at $\sqrt{s}=7$ and 8 TeV at CMS", May 2013
- Posters:
 - Belgian Physical Society meeting 2013 (Louvain-la-Neuve), "Searches for Long-lived Charged Particles in pp Collisions at $\sqrt{s}=7$ and 8 TeV at CMS", 22 May 2013
 - LHCC Meeting (CERN), "Search for Heavy Stable Charged Particles in pp collisions at $\sqrt{s}=7$ TeV", March 2011
- School:
 - BND graduate school in particle physics, Sept. 2011, Hoenderloo (NL) (no talk)

✍️ Publications

As a CMS member, I'm co-author of all CMS papers since April 2011, but was an active contributor to:

- CMS Collaboration, "Search for Heavy Stable Charged Particles in pp collisions at $\sqrt{s}=7$ TeV", **JHEP** 03 (2011) 024, arXiv:1101.1645. doi:10.1007/JHEP03(2011)024.
Internal PAS: CMS-PAS-EXO-10-011
- CMS Collaboration, "Search for heavy long-lived charged particles in pp collisions at $\sqrt{s}=7$ TeV", **Physics Letters B**, Volume 713, Issues 4-5, 18 July 2012, Pages 408-433
- CMS Collaboration, "Searches for long-lived charged particles in pp collisions at $\sqrt{s}=7$ and 8 TeV", JHEP 07 (2013) 122, arXiv:1305.0491. doi:10.1007/JHEP07(2013)122., July 2013 ; Internal PAS: CMS-PAS-EXO-12-026
- Nuttens, Claude Patrick J., "Overview of the CMS Strip and Pixel Detectors", PoS Vertex2013 (2013) 002, 2013