

# Mathieu B. Demarne

► Master Student in Computer Science at EPFL

**Birthday :** April 14<sup>th</sup>, 1991  
**Citizenship :** Switzerland and France

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## Education

- 2013 - currently** **Master's Degree of Computer Science at École Polytechnique Fédérale de Lausanne (EPFL), Switzerland**
- Specialization in Foundation of Software
  - **Relevant courses:** Advanced Compiler Construction, Cryptography and Security, Concurrent Algorithms, Model-based System Design, Big Data, Technology Ventures in IC
  - **Grade average:** 5.50 / 6 (or 3.67 GPA)
- 2010 - 2013** **Bachelor's Degree of Computer Science at École Polytechnique Fédérale de Lausanne (EPFL)**
- **Relevant courses:** Advanced Computer Theory, Computer Network, System Oriented Programming
  - **Grade average:** 5.49 / 6 (or 3.66 GPA)
- 2012 - 2013** **One Year Study Abroad at Carnegie Mellon University (CMU), Pittsburgh, United States**
- **Relevant courses:** Web Application Development, Foundation of Software Engineering, Operating System Design and Implementation, Security and Policy
  - **Award:** Dean's List, Carnegie Mellon University School of Computer Science. Awarded for outstanding academic performance during the Fall of 2012

## Technical Experience

- Sep. 2015 - Mar. 2016** **IBM Research - Zurich, Rüschlikon, Switzerland**
- Master Thesis "*Industrial Control System Security*"
- Feb. 2015 - Jun. 2015** **Codacy and École Polytechnique Fédérale de Lausanne (EPFL)** ◦ Scala / SBT
- **Worked in collaboration with Codacy ([codacy.com](http://codacy.com)) as part of a semester-long project**
    - Integrated style rule definitions in Scala to Codacy Engine.
    - As an outcome, Codacy decided to move away from the original JavaScript engine in order to use Scala and Scala.Meta for Scala styling patterns.
  - **Enhanced a linter tool for Scala to preserve original layout under code transformation**
    - Associated report: [demarne.name/docs/style-checking-scalameta-mdemarne.pdf](http://demarne.name/docs/style-checking-scalameta-mdemarne.pdf)
- Aug. 2014 - Feb. 2015** **Bloomberg L.P., London, United Kingdom**
- **Financial Software Development Placement** ◦ C++ / Javascript / SQL / Python
    - Built first phase of a new tool to allow automatic deployment of software packages across production servers. The task involved to follow security standards, SDLC and production deployment procedures.
    - Worked on a quote history component to plot large amounts of intraday data on prices and sizes from markets connectivities while following UI/UX standards.
- 2014 - currently** **École Polytechnique Fédérale de Lausanne (EPFL)**
- **AST Persistence** (Member of Project Scala.Meta (Scala Macros), [infoscience.epfl.ch/record/200050](http://infoscience.epfl.ch/record/200050))
    - Project in a group of two ◦ Scala / SBT
    - Storing compressed Abstract Syntax Tree along with bytecode at compile time; decompression and reuse at run time or compile time; automatic packaging using SBT (Simple Build Tool).
    - Research and learning in compilers and tree compression as well as automated building tools.
  - **CrossStream: "A real-time audit tool for the social web"** ([crossstream.ch](http://crossstream.ch))
    - Team leader in a group of seven
    - Real-time aggregator on the Social Web with subject correlations, maps and historical graphs, targeting newspapers and companies with important public image.
    - Developed a business plan and a go-to-market strategy as well as investment plan. My contribution:
      - Management of the team effort
      - Development of the prototype
      - Presentation and pitch
  - **Tweet Aggregator** ([github.com/TweetAggregator/CrossTalk](https://github.com/TweetAggregator/CrossTalk))
    - Team leader in a group of ten ◦ Scala / HTML / CSS / JS / Play Framework
    - Aggregation of tweets based on location, displayed on a dynamic map and clustered to represent intersections of keywords.
    - Project started as a part of a course on Big Data. My contribution:
      - Management of the team effort
      - Quality check, integration
      - Data sources management
- 2012 - 2013** **Carnegie Mellon University (CMU)**
- **Development of a Unix-Like Operating System**
    - Project in group of two ◦ C / IA-32
    - Research and learning in various topics such as OS booting, interruptions, stack behavior, memory error checking, low-level synchronization, kernel security.
    - Implementation of a kernel, including:
      - Virtual memory
      - Scheduler (round-robin)
      - Various drivers
      - System calls
      - Program loader
      - Thread library

## Original Experience

<b>2015</b>	<b>Winner of the Lausanne Startup Weekend 2015 with <a href="#">tasti.ch</a></b> (seven team members)
<b>2012 - currently</b>	<b>Online journal of stories and critics</b> (" <a href="#">le-cretin-transnational.ch</a> ") Logos and booklet, various articles (some published in a Swiss monthly student's newspaper).
<b>2012 - 2014</b>	<b>Teaching assistant for Information Sciences</b> (2012), <b>Teaching assistant for Logic Systems</b> (2014)
<b>2012</b>	<b>Involvement in the sailing association of EPFL, boat equipment manager</b>
<b>2009 - 2010</b>	<b>Six months of Volunteering in Thailand (AFS Association), placed in Khon Kaen High School</b>

## Computer skills

<b>Advanced</b>	Scala, C
<b>Good</b>	Java, C++, SQL, Assembly Language (IA-32), JavaScript, Python, HTML & CSS, Shell Scripting, OS Programming
<b>Tools</b>	Git, Eclipse, IntelliJ, Play Framework, SBT, svn, vim, Firework 8+

## Languages

<b>French</b>	Mother tongue
<b>English</b>	Working spoken and written language proficiency
<b>German</b>	Working comprehension

## Hobbies

Writing (redaction of two novels, one selected for a contest by *Les Nouveaux Auteurs* publishing house), Sailing, Cycling

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