Mathieu B. Demarne

▷ Software Engineer at Microsoft & Scala Enthusiast

Birthday: April 14th, 1991	**Phone:** +1 206 519 73 43
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Currently working at **Microsoft** on **Azure SQL Data Warehouse** in Scale Out and Performance.

Education

2013 – 2016 **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:** 5.63 / 6 (or 3.75 US 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 US 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

Oct. 2016 – Currently **Microsoft Corporation, Redmond, United States**
- Software Engineer on Microsoft Azure SQL Data Warehouse   ◦ C++ / C# / TSQL
- Part of the Scale out and Performance Team

Sep. 2015 – Mar. 2016 **IBM Research, Zurich, Switzerland**
- **Master Thesis "*Industrial Control System Security*"**   ◦ C++ / Python / Actor Model
- Built a generic, asynchronous and parallelized Anomaly Detection System (ADS) for time series data extracted from network traces. The project involved looking at Industrial Control Systems and existing ADS as well as designing the complete solution and implementing it.
- Grade: 6 / 6 (or 4 US)

Feb. 2015 – Jun. 2015 **Codacy and École Polytechnique Fédérale de Lausanne (EPFL)** ◦ Scala / SBT
- **Worked in collaboration with Codacy** (codacy.com) **as part of a semester-long project**
  - Integrated style rule definitions in Scala to Codacy Engine.
  - As an outcome, Codacy decided 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: infoscience.epfl.ch/record/218350

Aug. 2014 – Feb. 2015 **Bloomberg L.P., London, United Kingdom**
- **Financial Software Development Placement**   ◦ C++ / Javascript / SQL / Python
  - Built a new tool for auto-deployment across production servers, following security standards, SDLC and production deployment procedures.
  - Developed a component plotting large amounts of intraday data on quote prices from markets while following UI/UX standards.

2014 - 2016 **École Polytechnique Fédérale de Lausanne (EPFL)**
- **AST Persistence** (Member of Project Scala.Meta (Scala Macros), 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. Research in compilers, tree compression and build tools.
- **CrossStream: "*A real-time audit tool for the social web*"** (crossstream.ch)
  - Team leader in a group of seven
  - Real-time aggregator on the Social Web targeting medias 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
- **CrossTalk: tweet aggregator** (github.com/TweetAggregator/CrossTalk)
  - Team leader in a group of ten   ◦ Scala / HTML / CSS / JS / Play Framework
  - Aggregation of tweets based on location, displayed and clustered on a map dynamically.
  - 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

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

Computer skills

Advanced	Scala, C
Worked with	Java, C++, (T-)SQL, Assembly Language (IA-32), JavaScript, Python, HTML & CSS, Shell Scripting, C#
Skills	Reactive Programming, Parallel and Actor Programming, Web Development, Compilers, Operating Systems, Big Data Analytics

Languages

French	Mother tongue
English	Working spoken and written language proficiency
German	Working comprehension

Hobbies

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