

Sébastien Méric de Bellefon

Software developer - Bioinformatics

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Education

- Current **Master's degree in bioinformatics**, *Université of Montreal*, Montreal, Canada.
 - Excellence scholarship from Faculté des études supérieures et postdoctorales
- 2019 **Discover best practice Farming for a sustainable 2050**, *University of West Australia*, Coursera.
 - Certificate
- 2001-2006 **Master's degree in electronics**, *ISEP (Institut Supérieur d'Electronique de Paris)*, France.
 - Software engineering
 - Mathematics and physics, including statistics and electronics
- 2006 **Minor in Microelectronics**, *ITESM*, Monterrey, Mexico.

Experience

- October 2017 to Current **Research**, *Montreal Heart Institute*, Montreal, Canada.
 - Master's degree in bioinformatics at University of Montreal
 - Publication: Integrative analysis of vascular endothelial cell genomic features identifies AIDA as a coronary artery disease candidate gene
 - Association study of loss-of-function variants
 - Association study of transcription factor binding sites
 - TOPMed database (100k whole genome sequences)
- Jan 2017 to Sep 2017 **IoT R&D**, *Core Migration*, Montreal, Canada.
 - Created an IoT automation demo board with wireless and wired technologies
 - ZWave, Modbus, Bluetooth, Zigbee, Arduino, Raspberry Pi, Scala, C++
 - Deployed a prototype in a retail environment
- Nov 2014 to Jan 2017 **Scala developer/Devops**, *Triton Digital (Radio streaming)*, Montreal, Canada.
 - Created a datawarehouse and reporting layer (Scala, SparkSQL/Parquet, Looker)
 - Storing of the listeners' sessions, geographic data and advertising activity in order to share it with the other teams
 - Monthly and ad hoc reports
 - Integrated with Exelate's DPM to unify listeners' profiles
 - Created several enrichment microservices (geonames, maxmind, useragent)
 - Created a docker infrastructure (docker orchestration, continuous delivery, systemd, ansible, datadog, consul, marathon, AWS)
 - Automated the billing system for the streaming services and products, and created a UI with the finances team
- May 2011 to Nov 2014 **Consultant**, *Octo Technology*, Paris, France.
 - Tech lead in a full stack project (AngularJS, HTML5, Play)
 - Massively parallel database benchmarks
 - Performance audits
 - Architecture and code audits
 - R&D paper on the testability of functional programs, using a Haskell sample application
 - Haskell courses for colleagues
 - Wrote several articles for the corporate blog:
 - Software transactional memory
 - Equivalence of GoF design patterns in Haskell
 - An essay on functional databases
 - Analysis of the SQLFire database
 - Bloom filters

- May 2010 **C++ developer**, *Valerian*, Paris, France.
- to May 2011
 - Ported the C++ codebase from AIX to Linux (800 kLoC)
 - Adapted the code to a virtualized environment
 - Moved the storage from C-ISAM to MySQL
 - Created an alternative proposal for a rewrite in Haskell

- Oct 2008 **Python/C++ developer**, *BNP Paribas CIB*, Paris, France.
- to May 2010
 - Created a custom columnar database for the quantitative research teams
 - Added data enrichment (trade signing, liquidity)
 - Automated data exports to the Compliance department

- June 2006 **Python/C developer**, *TimeTracker*, D.F, Mexico.
- to Aug 2008
 - Created a biometric device, control server and network protocols from scratch:
 - User interface (GTK, Stackless Python)
 - Predictive algorithm and image processing to enhance fingerprint recognition
 - Network protocol between the biometric devices and the control server
 - P2P protocol for heavy files sharing between biometric devices
 - Lisp-based extension language for clients' custom rules
 - Initiated beginner Python courses
 - Administration of the working system and integration with the company front-end

Skills

Programming Languages	R, Python, C, C++. Haskell, Rust, Scala, Java, Common Lisp, Assembly, VHDL
Databases	SparkSQL/Parquet, Cassandra, Oracle, Teradata, Sybase IQ, MySQL, SQLite, SQL-Fire, Tokyo Cabinet
Devops	Ansible, Docker, Systemd, Marathon/Mesos, Consul, Serf, AWS, Datadog, continuous deployment
Tools	Git, Vim, Verifinger SDK (fingerprints), Latex, SnakeMake, Nix
Bioinformatics	VEP, SnpEff, Bcftools, ANNOVAR, CADD, EPACTS, PLINK, PyMOL, Blast, NCBI, PAINTOR
OS	Debian, Centos

Languages

French	Mother tongue
English	Fully proficient (TOEIC: 915/980, IELTS: 7.5/9)
Spanish	Proficient (3 years living in Mexico)

Open source contributions

Author	haskell-linode, wai-middleware-metrics
Contributor	Idris, docker-hs, PAINTOR, Nix