

Francis Piérait P.Eng., M.A.Sc.

Languages: French, English and little Spanish (Citizenship: Canadian and French)

Linkedin profile: <http://www.linkedin.com/in/fpieraut> (10 recommendations)

Technical blog: <http://fraka6.blogspot.com/>

Education

- Master in Applied Science (Statistical machine learning) 2001-2003
École Polytechnique de Montréal/ Université de Montréal (DIRO)
Research Director : [Yoshua Bengio](#)
- BAC in Computer/Software engineering École Polytechnique de Montréal 1995-1999
- Microsoft Developer Certification C# (MCAD 70-316) 2005
- Electronic Transaction Certification 2008
- Starting a business & sales training (SAJE Montreal and CEIM) 2010

Technical profile

- Lecturer of Intelligent Systems(Machine Learning) at ETS University ([log770](#))
- Apply Research Engineer with experience in new technology development & knowledge transfer
- Senior Software Engineer with experience in development,maintenance & release management
- Team lead & manager (R&D), planning, recruiting, evaluation & university research bridge
- Lead developer of mlboost, flayers, powerful machine learning libraries for real practitioner
- Real-time web traffic monitoring, incidents detection, root causes analysis, non-human behavior
- Montreal Python 6 main presenter on [Machine Learning empowered by Python](#)
- Library design ([flayers/ICU2/mlboost](#)), Object-Oriented Analysis & Design
- Real-time video compression (co-developer of ICU2)
- NLP/Speech recognition/DSP practical experience
- Statistical learning algorithms, data pre-processing, features selection & data-mining
- Addicted conference follower (IMCL, Pycon, [Mitacs](#))
- Programming language: Python, C++, C#, Matlab, awk, sed, sql etc.
- Knowledge transfer expert & R&D research credits follow up + Patents
- University research bridge/collaboration (udm, poly, ETS)
- Agile/scrum iterative development
- Consultant Jython/Python projects: Thomson Reuters for EdgeJava service working on akamai

Professional Experience

Founder & CEO at QMining

Jan 2010 ...

QMining is a third party data intelligence provider that offers SaaS (Software As a Service) for real-time data-mining. QMining offers [consulting services](#) and [data-mining SaaS](#).

Senior Software Developer at Pivotal-Payments

August 2008-August 2010

Pivotal Payments provides payments systems solutions, it is basically a payment system broker for various processors for Canada and United-States. As a member of the software group, I participate to the improvement, maintenance and scaling of their internal Python web-base software. This software includes billing, advanced commissions/transaction volume reporting, processor daily and monthly volume import, risk analysis, application workflow management and agent high level browsing status view.

Accomplishments:

- Stabilization of the 2 weeks release management and QA process & new team member training
- Implementation of key components of the Talaria migration process
- Main knowledge transfer point of reference & lead coordinator of iterations planning
- Lead coordinator of various performance improvements, profiling and bottleneck analysis
- Improvements of the processors import file process and lead coordinator of the admin module
- Technical presentations on python profiling, automatic testing (windmill), setting configuration refactoring, build tools, Data-Mining/Machine Learning, Agile/Scrum, virtualenv tool etc.

Technical environment: Linux/windows, Object-Oriented (Python), WSGI Web framework, Redmine/tracks (wiki/planning), mercurial, Pycon 2009 Chicago, mssql, ICML 2009, Confoo 2010

Professional Experience

R&D Director/Lead Software Research Engineer at Double V3

Feb –July 2008

Double V3 builds the next generation of audio file recommendation system. As the head of the R&D, my mandate is to lead the applied research on recommendation engine and fingerprinting technology. Some of my other duties are to build a dream R&D group, insure practical solution, improve knowledge transfer to production and ensure connection with top academic researchers. I was the investigator of a python revolution for the new algorithms. More specifically, my tasks were:

- Bring R&D leadership (5 direct people + 4 indirectly)
- Scrum master/PO/team member on R&D projects
- Research on music recommendation engine
- Interviewing candidates & main contact with head hunters & university (internships)
- Planning/teams coordination
- Recruiting (interns/researchers/software engineers)
- Writing R&D tax credits report (2007-2008)
- Writing Collaborative Filtering python prototype/support production optimization
- Design/implementation of the VideoFingerPrinting testing framework for confusion analysis
- Design a quality framework for fingerprinting technology (degradations)

Accomplishments:

- R&D team building (bring the team from 3 to 6 people)
- Bring R&D focus/vision
- Force better measure than RMSE/create benchmarks/Literature measure review
- Creation of datasets for similarity quality measure
- Start creating bridge with top researchers (Douglas Eck@UdM & Paul Lamere @Sun Research)

Technical environment: Linux, Object-Oriented (Python), Confluence (wiki), Agile(Scrumworks), ProjectPath, svn, Matlab, freemind, openoffice

Professional Experience

Machine Learning Specialist/Software Research Engineer at Coradiant

Feb 2005-Jan 2008

Coradiant builds real-time web traffic monitoring solutions. As a member of the advanced development team, my objectives were to adapt state of the art data-mining, machine-learning and signal processing techniques to create automatic incidents detection and root causes analysis. Some of my others tasks were:

- Create base theory of the AIM 1.0 new product (Automatic Incident Detection)
- Create BotDetector back-end engine prototype
- Creating architecture, design and theory documents
- Prototyping new technology (python)
- Machine learning models training & integration (matlab & python)
- Creating real customer datasets (features definition/extraction and pre-processing)
- Presenting new technology proof of concepts and results
- Providing knowledge transfer to the development group & support bugs investigation
- Creating bridge with consultants (Researchers at University of Montreal)

Accomplishments:

- Main contributor to AIM 1.0 new product theory/proof of concept and knowledge transfer
- Creator of the Bot Detector prototype
- Open source mlboost python library creation

Technical environment: WinXP, Linux, Object-Oriented (Python), Eclipse-Pydev, Mysql, svn, MS-Words, wiki, Cart (Salford- DecisionTrees); IJCNN 2005

Professional Experience

Chief Scientific Officer/Lead R&D Software Research Engineer at Dakis Oct 2003-Feb 2005

Dakis builds decision support systems. My mandate was to define research and development projects and lead the technology group. We developed a scalable decision system and a statistical Natural Language component to give human understandable explanations. Here are some of my other responsibilities at Dakis:

- Bring technology to commercial quality and scalability (DHE 3.1 & 3.2).
- Redesign and implement the Decision System and the Explanation Generator.
- Keep technology edge (Decision System).
- Introduce statistical models in their decision system.
- Recruiting technical staff.
- Code optimization and database redesign.
- Introduction of better software engineering development practices.
- Follow up with R&D credits, Patents etc.
- Lead a group of 7 engineers/programmers/interns.
- Technical presentation to share holders

Accomplishments:

- Lead first production version of the DHE
- MCAD certification to help the company getting the Microsoft Certified Partner status
- Major improvements to the Decision System (statistical approach)
- Inventor of the Explanation Generator theory and support to production knowledge transfer
- Quality of R&D tax credits rapports of 2003-2004 (templates for years 2004-...)
- Quality of patent review (support to Ogilvy Renault patent law firm)

Technical environment: WinXP, Object-Oriented (C#), Visual.NET, Agile (XP), pear programming, SQL-server, mysql, unit testing/Test Driven Development

Professional Experience

Junior Software engineer/Researcher at Idilia May-Oct 2003

I was in charge of improving the part-of-speech tagger. I reproduced the best known results based on the two level schemes of Vasile (Markow tagger, brill tagger and Wordnet ontology). I evaluated possible improvement with neural networks and find out some new features to consider. At the end, I worked with linguists to find and experiment heuristic to improve/increase tags categories.

Accomplishments:

- Discovery & patches of several tagging mistakes of the Wall Street Journal Corpus
- Implementation/integration/experimentation of the two level schemes of vasile
- First version of the knowledge browser web interface
- Framework to automate improved tags creation from rules (C++ program + sed/awk scripts)

Technical environment: Linux, Object-Oriented (C++), cvs, sed (regular expressions), awk

Others R&D experiences:

- **Research assistant at LISA** / (Machine Learning/Target Marketing for Bell) Summer 2001
- **Research assistant at CASI** / Code Analysis) Winter 2001
- **Internship at Locus Dialog** / (Speech Recognition) Summer 1999
- **2 Internships and part-time at Microcell-labs** / (R&D group: Learning Algorithms) 1997-1999

Other experiences:

- Presentation about my master project results during the LISA seminar, 25 February 2003 at the DIRO (University de Montréal).
- At [Ecole Polytechnique de Montréal](#), I was in charge of a C++ programming laboratory during 3 semesters (course INF1101).
- In a virtual reality contest in Laval, France, during summer 1999 (<http://www.laval-virtual.org/>), I was a member of Polytechnique broker team who won the public first price (Station SGI) and the second jury price for the Robot virtual contest.
- [Euro-velo 2000](#) cyclo tourism ~9 months trip
- Coop President (15 town houses condo cooperative): 2008...
- Father of 2 children