

Aurélien Roy

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Education

- M.Sc.Eng** University of Technology of Compiègne (Paris-Sorbonne) **2016-2019**
- **Computer Science (major):** Data structures and algorithms, Object-oriented programming, Structure of a CPU, Stochastic processes, Operational research, Graphs theory, Databases conception
 - **Data mining and B.I (minor):** Machine learning, Statistics, Data mining and analysis, Indexing and information search, Data-warehouses conception and population
 - **Other courses:** Intercultural business, Project management
 - **GPA:** 4.75 / 5.00
- Bachelor Degree** Paris-Sud University **2014-2016**
- **Computer Science (major):** Algorithms, Databases, System and networking, Web and Android development
 - **Result:** First in class

Work experience

- ML Research Intern** UMRsu (Town planning Research Institute), Canada **6 months, 2019**
- Analyzed and *valued* 5 years of data from 911 call center in Québec City.
 - Designed predictive models for police event quantification (crime, burglaries...) and implemented them in *Python*.
 - Used *PyTorch* and *scikit-learn* to build *LSTM* and *decision trees*, with *AWS* for training and hyperparameter optimization.
 - Offered *~19% higher accuracy* with these models compared to seasonal models at event count prediction.
 - Presented methodology and results in a *research paper* (pending review).
- Software Engineer Intern** Thales (Defense), France **6 months, 2018**
- Improved a scenario editor software built with *C++*, *Java* and *SWT*, resulting in a *broader usage* in the department.
 - Harmonized the tools used by two different Agile teams by *enabling information exchange* between them.
 - Saved 2-week per new software release of a military radio simulator by building an *automated qualification process* using *Jenkins* combined with UI automation tools.
- Freelance Developer** Client: Arabesque (Dance School), Remote **3 months, 2018**
- Developed a single-page app using *Javascript* and *Vue.js* allowing the dance school to manage its members, the registration renewals, the membership billing and the course schedule, alongside a *backend server* and a *REST API* made with *PHP* and *SQL*.
- IT Teacher (Part-time)** CNAM (Higher education establishment), France **4 months, 2018**
- *Taught* Algorithm and Java in parallel with my studies.

Software projects

- Find Cat Breed (iOS app)** Personal project, Open-Source **2019**
- Built a *computer vision* app for iOS, using *Swift* and *CoreML* and published it on the *App Store*.
 - Trained an *ResNet image classifier* with *PyTorch* capable of distinguishing *44 cat breeds* with a *51% accuracy*.
- Craftasia (Large Minecraft server)** Personal project **2013-2016**
- *Developed with Java and deployed* game modes for one of the largest french Minecraft server in its time (10K registered members and up to 150 simultaneously online players).
 - *Administrated a Unix server* and managed the codebase using *Gradle*.

Skills

- **Technologies:**
Programming: C/C++, Java, Python, Swift ; *Data science:* PyTorch, R, scikit-learn, SQL, Tensorflow
Web: HTML, CSS, Javascript, PHP, Vue.js ; *DevOps:* AWS, Bash, Git, Gradle, Jenkins, Maven, Unix
- **Machine learning:** Deep neural networks, SVM, splines, decision trees, discriminant analysis
- **Business intelligence:** Data-warehouse and datamarts conception and population