

# Aurélien Roy

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## 🎓 Education

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|---|--|------------------|
| <b>M.Sc.Eng</b>   | University of Technology of Compiègne (Paris-Sorbonne) | <b>2016-2019</b> |
| <ul style="list-style-type: none"><li>• <b>Computer Science (major):</b> Data structures and algorithms, Object-oriented programming, Structure of a CPU, Stochastic processes, Operational research, Graphs theory, Databases conception</li><li>• <b>Data mining and B.I (minor):</b> Machine learning, Statistics, Data mining and analysis, Indexing and information search, Data-warehouses conception and population</li><li>• <b>Other courses:</b> Intercultural business, Project management</li><li>• <b>GPA:</b> 4.75 / 5.00</li></ul> |  |                  |
| <b>Bachelor Degree</b>  | Paris-Sud University                                   | <b>2014-2016</b> |
| <ul style="list-style-type: none"><li>• <b>Computer Science (major):</b> Algorithms, Databases, System and networking, Web and Android development</li><li>• <b>Result:</b> First in class</li></ul>  |  |                  |

## 💼 Work experience

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|---|--|-----------------------|
| <b>ML Research intern</b>   | UMRsu (Town planning Research Institute), Canada | <b>6 months, 2019</b> |
| <ul style="list-style-type: none"><li>• Analyzed and valued 5 years of data from 911 call center in Québec City</li><li>• Designed predictive models for police event quantification (crime, burglaries...)</li><li>• Trained <i>LSTM</i> and <i>decision trees</i> models offering <b>~19% higher accuracy</b> than seasonal models at event count prediction</li><li>• Presented methodology and results in a <i>research paper</i> (pending review)</li><li>• <b>Utilized:</b> Python, PyTorch, scikit-learn, PostgreSQL</li></ul> |  |                       |
| <b>Software engineer intern</b>   | Thales (Defense), France                         | <b>6 months, 2018</b> |
| <ul style="list-style-type: none"><li>• <b>Broadened usage</b> in the department of a scenario editor software by improving it to handle new use cases</li><li>• <b>Harmonized</b> the tools used by two different Agile teams by <b>enabling information exchange</b> between them</li><li>• <b>Saved 2-week</b> per new software release of a military radio simulator by building an <i>automated qualification process</i></li><li>• <b>Utilized:</b> C++, Java, SWT, Jenkins</li></ul>   |  |                       |
| <b>IT Teacher (Part-time)</b>   | CNAM (Higher education establishment), France    | <b>4 months, 2018</b> |
| <ul style="list-style-type: none"><li>• <b>Taught</b> Algorithm and Java in parallel with my studies</li></ul>  |  |                       |

## 📁 Software projects

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|--|--|------------------|
| <b>Find Cat Breed</b> (iOS app)  | Personal project                             | <b>2019</b>      |
| <ul style="list-style-type: none"><li>• <b>Taught myself Swift</b>, built an iOS <i>computer vision</i> app using <i>machine learning</i>, and published it on the <i>App Store</i></li><li>• Trained an <i>image classifier</i> capable of distinguishing <b>44 cat breeds</b> with a <b>51% accuracy</b></li><li>• <b>Utilized:</b> Swift, CoreML, Python, PyTorch</li></ul> |  |                  |
| <b>Business app</b> (Web app)  | Freelance (Client: Arabesque - Dance School) | <b>2018</b>      |
| <ul style="list-style-type: none"><li>• Developed a <i>single-page app</i> allowing the dance school to manage its members, the registration renewals, the membership billing and the course schedule</li><li>• <b>Utilized:</b> PHP, SQL, Javascript, Vue.js</li></ul>  |  |                  |
| <b>Craftasia</b> (Large Minecraft server)  | Personal project                             | <b>2013-2016</b> |
| <ul style="list-style-type: none"><li>• <b>Developed and deployed</b> game modes, <b>administrated a Unix server</b> for one of the largest french Minecraft server in its time (10K registered members and up to 150 simultaneously online players)</li><li>• <b>Utilized:</b> Java, Maven, PHP, SQL, Unix</li></ul>  |  |                  |

## </> Skills

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