# Liam Toran

San Francisco, CA

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*Driven Data Scientist with an international background in research and strong analytical skills. Fluent in Python and Maths.*

## Education

**Ecole Normale Superieure de Lyon (ENS Lyon)** **France**

***Master's Degree in Applied Mathematics*** *2018*

- Studied Advanced Statistics and Machine Learning, Numerical Methods, Statistical Physics, Stochastic Calculus, Dynamical Evolution Equations, Harmonic Fluid Dynamics, the Boltzmann Gaz Equation and more.

***Bachelor's Degree in Computer Science** and **Bachelor's Degree in Mathematics*** *2016*

- Studied Algorithms, Data Structures, Linear Algebra, Programming and Junior level classes in Physics.
- Entered ENS Lyon, **a top 3 school in France**, through a top 0.5% ranking in nation-wide competitive exams.

## Experience

**National Center for Scientific Research (CNRS), J.A.Dieudone** **Nice, France**

*Technical Research Assistant, 6 months* *2019*

- Simulated and analyzed Dynamical Networks, e.g. fungus growth.
- Mastered new models and uses of stochastic and partial differential equations in population dynamics.
- Implemented state-of-the-art numerical fluid simulation techniques and predictive models through Python.
- Solved the relationship between the physical parameters and the propagation speed for dynamical branching networks.

**UCSD, Biomedical Research Institute, Knight Lab** **San Diego, USA**

*Machine Learning Research Assistant Intern, 5 months* *2017*

- Analyzed compositional microbiological datasets using supervized & unsupervized learning.
- Coded several new compositional statistical data analysis methods with Python & applied them to the Knight Lab datasets.
- Discovered a long time unresolved bias that arises during unsupervized SVD dimensionality reduction and it's cause.
- Found a way to resolve it using better metrics. **Led a conference in front of 55 scientists** to explain the phenomenon.
- This led to the following *research article* (11 citations).

**National Institute for Research in Computer Science and Automation (Inria)** **Grenoble, France**

*Computer Science Research Assistant Intern, 3 months at the BiPoP team* *2016*

- Modelized, simulated, optimized and controlled cloth's move with implicit contact and exact friction.
- Solved and simulated use cases and prototypes of the problem in Python.
- Built a new scalable solver of the problem. Implemented it in production software using C and C++.
- The resulting solver was **ten times faster** than the previous product. This led to the following *research article* (8 citations).

**Miscellaneous**

Math & Physics Teaching and Tutoring (undergraduate students) *2018 - 2019*

## Professional Skills

**Software Development**: Python (Jupyter, Pandas, scikit-learn, Keras, PyTorch, TensorFlow, Matplotlib, ...), R, C, C++, SQL, Linux, Git, LaTeX, MatLab, Lisp, Excel.

**Data Analysis**: Bioinformatics, Regression, Classification, Feature engineering, Deep Learning, Natural Language Processing (NLP), Data Visualization, Metrics.

**Statistical Models**: Linear, Decision Trees, Random Forests, Boosting, SVMs, Neural Networks : Convolutional Neural Networks, Recursive Neural Networks, LSTMs, ResNet ....

**Languages**: **English & French:** Fluent (native) **Japanese:** Basic (self-taught)

## Interests and Hobbies

Travelling the world, Meeting new people, Sci-Fi & Artificial Intelligence, Life Sciences, Mangas, Gaming, Piano.