Liam Ilan Toran

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Driven Data Scientist with an international background in Research and great analytical skills. Highly motivated to dive deep in the world of Data & Analytics. Fluent in Python and Maths, with a passion for learning new things.

Education

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

Master's Degree in Applied Mathematics *2018*

- Studied courses include advanced statistics and machine learning, numerical methods, statistical physics, stochastic calculus, dynamical evolution equations, harmonic fluid dynamics and the Boltzmann gaz equation.

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

- Studied courses include Algorithms I & II, Data Structures, Logic, Programming and Junior level classes in Physics.
- Entered ENS Lyon, a top 3 school in the field in France, through a top 0.5% ranking in nation-wide competitive exams.

Experience

J.A.Dieudone Research Institute, University of Nice Sophia Antipolis **Nice, France**

Technical Research Assistant Intern, 6 months *2019*

- Simulated and analyzed Dynamical Networks, e.g. social media networks or 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.

Knight Lab, Biomedical Research Institute of UCSD **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 the reason behind a bias that
- Co-authored a *research article about the horsheshoe effect* (11 citations), explaining how it arises in various datasets after unsupervized SVD dimensionality reduction, and how to learn from it to **build a better metric for datasets with an underlying gradient**.

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

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

- Modelized, simulated, optimized and controlled cloth's move simulation 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*.

Miscellaneous

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

Professional Skills

Software Development: Python (Jupyter, Pandas, sklearn, Keras, PyTorch, TensorFlow, Matplotlib, ...), C, C++, SQL, Linux, Git, LaTeX, MatLab, Lisp, Excel.

Machine Learning & Data Analysis: Regression, Classification, Feature engineering, Deep Learning, Natural Language Processing (NLP), Computer Vision, Scoring, Metrics, Data Visualization.

Statistical Models: Linear, Trees, Forests, Boosting, SVMs, Neural Networks.

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

Interests and Hobbies

Travelling the world, Sci-Fi, Mangas, Gaming, Piano (self-taught).