Liam Toran

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WORK EXPERIENCE

Flowcast   Jan. 2020 – Present
Data Scientist   *San Francisco, CA*
- Led development of a soft supervised text classification pipeline with hyperparameter optimization using Torch and Ray.
- Designed and built a large scale machine learning model currently used at a top 10 European bank to score 3 million clients monthly. The model uses PySpark ETL and XGBoost to deliver fast and accurate predictions.
- Achieved a 47% reduction of the error rate of a model used by the top worldwide fashion brand. The increase in performance was accomplished by revising feature engineering and hyper-parameter tuning.
- Led research for a recommendation system platform based on contextual multi armed bandits for Flowcast's app Tillful.
- Established and maintained a knowledge repository containing resources, best practices and guides for Data Scientists.
- Interviewed and selected top DS, data engineer, and ML engineer talent who contributed to Flowcast and Tillful's success.

University of Nice Sophia-Antipolis, Research Institute   2019
Applied Mathematics Research, Intern, 6 months   *Nice, France*
- Conducted research on population dynamics in social media networks and organic growth, utilizing numerical simulation techniques and reaction-diffusion models and partial differential equations theory.
- Implemented a PDE solver with Julia, Python, and sparse linear algebra min residuals that increased speeds by 50x.
- Derived theoretically and numerically validated formula for network propagation speed based on environmental variables.

UCSD, Biomedical Research Institute, Knight Lab   2017 - 2018
Machine Learning Research, Intern, 7 months   *San Diego, CA*
- Applied UMAP, PCA, UniFrac distance and phylogenetic trees to analyze three real world microbiological datasets.
- Conducted research to solve long-time bias in dimensionality reduction, resulting in co-authoring a peer-reviewed [research article](research%20article) (62 citations) and presenting findings to an audience of 55 research scientists at a conference hosted by UCSD.

Inria   2016
Research Engineer, Intern, 3 months   *Grenoble, France*
- Developed a Python and C++ differential equation solver to improve 3D cloth physics Coulomb friction simulation.
- The new method was 10x faster than the baseline and helped reach an unprecedented level of realism for cloth-cloth/body interactions and is referenced in the following peer-reviewed [research article](research%20article).

EDUCATION

[ENS Lyon](ENS%20Lyon)   2019
MS Applied Mathematics, BS Math with Computer Science specialization   *Lyon, France*
- Entered ENSL (top 3 school in France) with a scholarship via top 0.5% ranking in nationwide entrance exams.
- Studied Machine Learning, Statistics, Algorithmics, Programming, Linear Algebra, PDEs, Stochastic Calculus and more.
- Taught undergraduate level mathematics and physics courses to help 6 students succeed in competitive entrance exams.

SKILLS

Machine Learning: Deep learning, Natural Language Processing (NLP), Semi supervised / unsupervised methods, Interpretability and Explainability, Uncertainty quantification, Multi Armed Bandits & Recommendation, Time Series, Classification, Clustering, Metrics, Data visualization, Large data sets, Neural Networks, Gradient Boosting.

Software Development: Python ecosystem (pandas, numpy, scikit-learn, matplotlib), PyTorch, PySpark, Snorkel, Ray, Git, GitHub, DVC, SQL, Distributed & Parallel computing, Linux, AWS, Azure, TensorFlow, Spark, LaTeX, Excel, R, C++, C.

Languages: English: Fluent,   French: Fluent,   Spanish: Basic,   Japanese: Basic (self-taught).

Hobbies: Technology, DIY building, modifications and repairs, Fixing problems with innovation and learning new things!