ANTONIN VIDON

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EDUCATION

Columbia University — New York, USA
MS in Data Science — Dec 2022
Relevant coursework includes Neural Networks and Deep Learning, Exploratory Data Analysis and Visualization, Algorithms for Data Science, Computer Systems for Data Science, Advanced Deep Learning, Natural Language Processing

École Polytechnique — Palaiseau, France
MS in Applied Mathematics — Aug 2021
Relevant coursework includes Data Analysis and Unsupervised Learning, Machine and Deep Learning, Statistical Modeling, Statistics, Learning Theory, Regression theory and applications, Rare Event Simulation, Stochastic Models in Finance, Micro & Macroeconomics, International Economics

Lycee Hoche — Versailles, France
Preparatory class for nationwide competitive exam (MPSI/MP*) — Jul 2018
Undergraduate coursework includes includes Mathematics, Physics and Computer Science (Python and SQL)

WORK EXPERIENCE

Huawei — London, United Kingdom
Reinforcement Learning Research Intern — Mar 2021 - Aug 2021
- Implemented recurrent A2C and DQN models to solve navigation tasks from raw visual information in an interactive environment
- Developed and trained a deep generative model to imitate "expert-like" navigation behavior on different types of surfaces
- Modeled posterior distribution of future trajectories by combining the imitation prior with a flexible task specific goal likelihood

Bain & Company — Paris, France
Associate Consultant Intern — Jun 2020 - Aug 2020
- Conducted market potential analyses based on financial datasets of onshore/offshore wind turbine manufacturers
- Co-designed a transformation program for a large European manufacturer's consisting of a 2B$ SG&A reduction plan over 3 years

Junior Enterprise of École Polytechnique — Palaiseau, France
Treasurer & Project Manager — May 2019 - Dec 2020
- In charge of a 200,000€ budget, accounting, payroll, and tax payment
- Drafted proposals for potential clients and supervised diverse data-oriented projects (e.g., web app development, market analysis)
- Awarded "Outstanding Investment" for involvement in École Polytechnique's student community

Shanghai Jiao Tong University — Shanghai, China
Teaching Assistant in Physics — Oct 2018 - Mar 2019
- Taught Electromagnetism and Thermodynamics to Chinese undergraduates preparing France's Grandes Écoles entrance exams
- Purchased, welded, and miniaturized boxes for the controlled steering of a D.C.-motor drive unit
- Designed and built a lab equipment database to improve department's inventory management

ACADEMIC & PERSONAL PROJECTS

Department of Electrical Engineering of Columbia University — New York, USA
Squeeze and Excitation Networks @ — Sep 2021 - Dec 2021
- Implemented ResNet, ResNeXt and InceptionV3 in TensorFlow as well as Squeeze and Excitation blocks
- Reduced classification error using correlation modules on CIFAR-10, CIFAR-100, and Tiny ImageNet by .5 to 4.5% for ResNet/NeXt
- Performed analysis of ratio, stage integration, activation distributions and inference time with Squeeze and Excitation blocks

Department of Statistics of Columbia University — New York, USA
Energy consumption and human development @ — Sep 2021 - Dec 2021
- Conducted analysis of the cross directional causality between energy consumption, GDP, years of schooling and life expectancy
- Built an interactive component to visualize the evolution of the energy mix across time for various HDI index ranges (D3)

Department of Applied Mathematics of École Polytechnique — Palaiseau, France
Improving patient care of young women with breast cancer — Sep 2020 - Dec 2020
- Processed results from surveys made at different stages of illness and built life trajectory related scores to analyze clinical pathways
- Performed t-SNE, PCA and clustering for young patients under 45 to demonstrate the need for an age specific treatment

Department of Computer Science of École Polytechnique — Palaiseau, France
COVID19 Retweet Prediction @ — Sep 2020 - Dec 2020
- Carried out thematic clustering and differential prediction of number of retweets with Gradient Boosting and Quantile regression
- Performed text embedding with Bidirectional Encoder Representations (BERT, Google) for deep prediction with TensorFlow

Department of Physics of École Polytechnique Palaiseau, France
Integration of physical models into voxel-based video games Sep 2019 - Jun 2020

- Implemented thermal model of corrosion, diffusion, and passivation of metallic voxel on Unity engine in C#
- Built gameplay to interact with these models in order to enhance pedagogical and recreational features of the game
- Ranked 1st/112 capstone projects and awarded "Excellence prize" during a public prototype exhibition

Classification for Breast Histopathology @ & @ Feb 2020 - Dec 2021

- Conducted exploratory data analysis of patches scanned at x40 (e.g., class balance, kernel density of tissue color in HSV space)
- Oversampled cancerous patches and selected XGBoost as best state-of-the-art classifier based on cross-validation: 81.4% acc.
- Built from scratch and trained customized versions of ResNet18, ResNet34 and ResNet50: 85.8% best test acc.

Other projects: development of a Shiny App to create animated gifs from a dynamic interface @, implementation of an Importance Sampling algorithm to estimate value at risk for complex portfolios.

SKILLS & INTERESTS

- IT: Python (PyTorch and Tensorflow), R, Java, SQL, C++/C#, LaTex
- Languages: French (native), English (fluent), German (intermediate)
- Major interest: Piano (15 years) - Numerous performances & CEM diploma (highest non-professional degree of Music Theory)