ACHILLE NAZARET

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I am a hardworking graduate in mathematics and computer science with experience in software development and research, seeking an internship for summer 2020.

EDUCATION

Columbia University, New York, NY — Aug 2019 - Dec 2020
- Master of Science, Computer Science – Machine Learning Thesis track
  Teaching assistant: Machine Learning (COMS4771) Research: Optimization of manifolds flows, Google Brain
  Courswork: Probabilistic Machine Learning, Randomized Algorithms, Optimization

École Polytechnique, Palaiseau, FR — Aug 2016 - Jul 2019
- Master of Science, Applied Mathematics & Computer Science – Vision, Learning track **3.98/4**
  Coursework: Machine Learning, Reinforcement Learning, Statistics, Parallel computing, NLP, Computer vision
- Bachelor of Science, Applied Mathematics & Computer Science **3.95/4**
  Coursework: Stochastic processes, Probabilities, PDEs, Control theory, Algorithmics, Completeness theory

Lycée Sainte-Genevieve - France's top program in Maths, Versailles, FR — Aug 2014 - Jul 2016
- MPSI-MP*: Competitive undergraduate program in mathematics, physics and computer science **3.98/4**
  Coursework: Linear Algebra, Differential calculus, Discrete probabilities, Algorithmics, Functional Programming

WORK EXPERIENCE

University of California Berkeley, Berkeley, CA — Apr 2019 - Aug 2019
Student Researcher
- ICML 2019, Workshop in Computational Biology. Spotlight talk. Best poster presentation Award
- Developed deep generative models to impute unseen genes in spatial data using scRNA-seq data *Pytorch*
- Generalized Convolution NN to detect spatial correlations and cellular interactions in spatial genomics

IMC Trading, Amsterdam, NL — Jun 2018 - Sep 2018
Software Engineer and Machine Learning Researcher
- Improved imitation learning models by 15% to simulate stock market's reaction for *futures* trading *Python*
- Resolved training pipeline overloads by distributing the bottleneck steps on a cluster *Java, Bash*

Bernardaud, Paris (Remote), FR — Feb 2018 - Jun 2018
Operational research engineer - alongside studies
- Designed algorithms to find optimal production processes under factory constraints *Python*
- Created user-friendly full-stack software connecting new algorithms to the databases *JavaScript, Django*

Ministry of Defence, Paris, FR — Nov 2016 - Apr 2017
Junior Data-scientist
- Improved graph-mining and NLP models from NIPS2016 for News and Social Network analysis *Tensorflow*
- Designed full-stack visualizations tools between user and algorithms to advise analysts *Flask, HTML*

SELECTION OF PROJECTS

Topological Data Analysis applied to metric graphs, INRIA Saclay, FR — 2018 – 2019
- Worked on homology-based metric graph embedding using persistence theory
- Discretized state-of-the-art barcode embedding algorithms to make them computable in polynomial time

Computer graphics and computer vision, Paris FR — 2018
- Developed an augmented reality app mapping 3d objects to QR-code detected via pose estimation *C++*
- Simulated a 3D physics engine for rigid bodies and a numerical solver of Navier-Stoke for fluids *C++*

Graph analysis of Ethereum Blockchain, Paris FR — 2017 – 2018
- Led R&D team-project organized in collaboration with EY, ConsenSys, Société Générale and AliBaba.
- Developed reputation tools to score transactions and detect suspicious activities *Python, Hadoop*

On exotic matrix decompositions, Top grade at ENS Paris contest, Versailles FR — 2016
- Worked on advanced decompositions: product of two antisymmetric matrices, sum of square-zero matrices
- Extended results to any prime finite fields, achieved constructive proofs algorithmically tractable

EXTRA

Science Programming & maths contests (ICPC, BattleDev, Bootcamp), Mentor FIRST robotic team
Sports Rock climbing, skydiving, working out, military training
Leadership Army officer, accelerated track in French military academy. Section leader of 30 cadets