

Julien VERON VIALARD

Senior Applied Machine Learning Scientist at Splunk

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WORK AND RESEARCH EXPERIENCE

Splunk

August 2021 – Present

Senior Applied Machine Learning Scientist

San Francisco, USA

- Team lead of 3 ML Scientists. Built a custom assistant for Splunk's query language code generation and explanation. Defined roadmap to go from ideation to product deployment and maintenance. Implemented distributed training and parameter-efficient fine-tuning of large (13+ billion parameters) language models such as StarCoder and Llama-2. During early training phase, set up an internal web portal to collect Splunk employees' feedback and used such feedback to iteratively improve model performance. Successfully launched a lightweight model version on Splunk's add-on marketplace with implemented user telemetry collection infrastructure.
- Experienced in interacting with cross-functional technical and non-technical teams for prototyping new products: Information Retrieval system for documentation question answering with finetuned sentence embeddings, Named Entity Recognition for threat actors and malwares in unstructured cybersecurity data with finetuned distilBERT. Proficient in engaging with customers and in partnering with external research teams (NVIDIA Morpheus). Speaker at Splunk .conf22 and NVIDIA GTC 2022 conferences.

Guerbet

June 2020 – September 2020

Research Scientist (Intern)

Paris, France

- Supervised prediction of perfusion maps from temporal perfusion sequences of the brain, even in low-dose regimes of contrast agent, using a modified U-Net convolutional model. Achieved SOTA on a public dataset. Two talks at IEEE-ISBI 2021 conference.

Previous Internships:

- Data Scientist at Elefant Sciences (electronic market-maker for US fixed income) from January 2019 to May 2019
- Quantitative Researcher at Alpstone Capital (Global Macro hedge fund) from July 2018 to December 2018

CONFERENCES, PATENTS AND PUBLICATIONS¹

- Gave talks at Splunk .conf22 (PLA1152C) and NVIDIA GTC 2022 (S41688) conferences on large language model training for code generation and explanation, and wrote accompanying technical blog posts.
- IEEE ISBI 2021. "Going Beyond Voxel-Wise Deconvolution in Perfusion MRI with StU-Net" (WePMP3.10). "A Lightweight Method to Simulate Low-Dose DSC-Perfusion Sequences" (WePMP3.9).
- Co-authored 1 published patent (WO/2022/129633) and 4 in-review patents.
- Working paper. "High Rollers: Approximate Top Grouped Quantiles on Streams". Designed a streaming and mergeable data structure to find the top keys in a stream of (key, value) records, ranked by a quantile of interest. Used for identifying sources of high latency.
- Pain and Therapy journal. "Perioperative Psychological Factors, Remote Opioid Cessation and Pain Resolution among Patients Undergoing Total Joint Arthroplasty – A Prospective Cohort Study".

EDUCATION

Stanford University

September 2019 – June 2021

Master of Science; Computational and Mathematical Engineering

Stanford, USA

- Natural Language Processing with Deep Learning, Convolutional Neural Networks for Visual Recognition, Applied Statistics, Convex Optimization, Probabilistic Graphical Models, Discrete Mathematics, Mining Massive Data Sets, Causal Inference.
- Graduate Research Assistant, advised by Dr. Jennifer Hah, Prof. Bradley Efron and Balasubramanian Narasimhan. Identified baseline and follow-up mood factors contributing to time to opioid cessation and time to pain cessation in a longitudinal clinical study.
- Graduate Teaching Assistant. CME 106: Introduction to Probability and Statistics for Engineers (Winter 2020, Prof. Khayms).

Ecole Centrale Paris

September 2016 – June 2019

Master of Science; Engineering

Paris, France

- Applied Mathematics, Applied Statistics, Statistical Physics, Machine Learning, Algorithms, and Software Engineering.

COMPUTER SKILLS AND LANGUAGE

- Expert in Python (NumPy, SciPy, Pandas, scikit-learn, PyTorch). Proficient in R (RStudio), SQL (PostgreSQL), Ubuntu, AWS, and Microsoft Azure. Prior experiences in C++, Java, and Julia.
- French (native), English (fluent), Spanish (intermediate).

¹ Visit my personal website <https://jvialard.github.io/research/> for more information.