Nathan Godey

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Publications

- **Is Anisotropy Inherent to Transformers?**: ACL SRW 2023, (link)
- **MANTa: Efficient Gradient-Based Tokenization for Robust End-to-End Language Modeling**: EMNLP Findings 2022, (link)
- **How word frequency affects language models**: Blog post, (link)

Experience

- **Université Pierre et Marie Curie** — Paris, France
  Teaching Assistant in Python (Bachelors) — *Jan 2023 - now*
- **Université Paris 1** — Paris, France
  Teaching Assistant in Linear Algebra (Bachelors) — *Jan 2022 - May 2022*
- **Ministry of Defense** — Paris, France
  R&D internship in Natural Language Processing — *May 2021 - Nov 2021*
  - **NLP in low-resource setting**: Wrote a codebase from scratch to benchmark different state-of-the-art approaches (BERT, RNNs, CRF) on in-domain noisy datasets
  - **Improved performance for the specific use-case**: Leveraged semi-supervised learning, multilingual alignment and synthetic noise to improve on state-of-the-art methods
- **The AI Institute (start-up)** — Boston, USA & Paris, France
  Teaching Assistant and R&D internship — *Jan 2020 - Jul 2020*
  - **Chatbot and Search Engine**: Built a next-question recommendation system for a question answering chatbot based on BERT and Hierarchical Clustering
  - **ML courses**: Taught online classes to retraining engineers about Applied Mathematics, ML and DL

Education

- **Inria/ALMAnaCH, Université Paris Sorbonne** — Paris, France
  PhD. in Natural Language Processing (pending) — *Dec 2021 - now*
  Subject: Cheap and Expressive Contextual Neural Representations for Textual Data
- **Université Paris-Saclay** — Saclay, France
  Master MVA courses (no diploma; GPA: 4.0 (17.3/20)) — *Sep 2020 - Jun 2021*
  Courses: Speech and NLP, Computational Optimal Transport, Image Denoising, Graphs in ML, Modelling in Neuroscience, Deep Learning
- **École Nationale des Ponts et Chaussées** — Paris, France
  Engineering Degree ; GPA: 3.65 — *Sep 2017 - Jun 2021*
  Courses: Advanced Analysis, Optimization, Machine Learning, Advanced Algorithmic, Operations Research, Probability and Statistics

Skills Summary

- **Languages**: Python, C++, Javascript, SQL, Unix scripting
- **Tools**: PyTorch (+ Lightning), Hydra, Pytest, ReactJS, Git, Flask, ExpressJS, AirFlow, Postgres

Academic Projects (available on Github)

- **Cycle-consistent Voice Conversion**: Developed a new method based on CNN to convert the speech of some speaker into the same speech as said by another speaker. Trained for several days on Colab to obtain interesting results.
- **Stochastic simulation of Argon gas**: Implemented a simulation of an Argon particles set in C++ following stochastic differential equations to verify thermodynamical properties as a Statistical Physics project.
- **Metaheuristics for the Minimum Connected k-Cover problem in a Network of Sensors**: Used a Genetic Algorithm to tackle a problem about covering an area with connected sensors. Added advanced features to improve diversity at convergence and improve results.
- **Simulation of Neurofeedback-Induced Striatal Learning**: Studied Neuro-feedback via simulation using partial differential equations and exposed interesting properties that were studied in practice.