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ARTIDORO PAGNONI

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EDUCATION

Seattle, WA **University of Washington** **Fall 2021 – present**
- Ph.D. Student Computer Science & Engineering
- Research in NLP with focus on efficiency, language generation, evaluation, and reasoning.
- Advisor: Luke Zettlemoyer

Pittsburgh, PA **Carnegie Mellon University** **Fall 2019 - Summer 2021**
- M.S. Language Technologies (MLT) GPA: 4.06
- Research in NLP on language generation, faithfulness of summarization, and representation learning.
- Advisor: Yulia Tsvetkov

Cambridge, MA **Harvard University** **Fall 2014 - Spring 2018**
- M.S. Computer Science, Advisor: Alexander Rush GPA: 3.875
- B.A. Physics with Advanced Standing, Secondary in Mathematics GPA: 3.653

Rome, Italy **Lycée Chateaubriand French High School** **Fall 1999 - Spring 2014**
- French Baccalaureate, GPA: 20.4/20.
- Finalist in the French Math Olympiads, May 2013

PUBLICATIONS

Under Review
- **Pagnoni, Artidoro**, Alexander R. Fabbri, Wojciech Kryściński, and Chien-Sheng Wu. "Socratic Pretraining: Question-Driven Pretraining for Controllable Summarization." arXiv preprint arXiv:2212.10449 (2022).

Peer Reviewed
- Spiliopoulou, Evangelia*, **Artidoro Pagnoni***, Eduard Hovy, Yonatan Bisk "EvEntS ReaLM: Event Reasoning of Entity States via Language Models" *Proceedings of EMNLP* 2022

- **Pagnoni, Artidoro**, Martin Graciarena, Yulia Tsvetkov "Threat Scenarios and Best Practices to Detect Neural Fake News: A Case Study on COVID News" *Proceedings of COLING* 2022 (**best paper nomination**)

- Yu, Gyeong-In, Saeed Amizadeh, Sehoon Kim, **Artidoro Pagnoni**, Byung-Gon Chun, Markus Weimer, and Matteo Interlandi. "Making classical machine learning pipelines differentiable: A neural translation approach." *PVLDB 2022.*

- **Pagnoni, Artidoro,** Vidhisha Balachandran, and Yulia Tsvetkov. "Understanding Factuality in Abstractive Summarization with FRANK: A Benchmark for Factuality Metrics." *Proceedings of NAACL* 2021.

- Balachandran, Vidhisha, **Artidoro Pagnoni**, Jay Yoon Lee, Dheeraj Rajagopal, Jaime Carbonell, and Yulia Tsvetkov. "StructSum: Incorporating Latent and Explicit Sentence Dependencies for Single Document Summarization." *Proceedings of EACL 2021*.

- Spiliopoulou, Evangelia, **Artidoro Pagnoni**, and Eduard Hovy. "Definition Frames: Using Definitions for Hybrid Concept Representations." *Proceedings of COLING* 2020.

- **Pagnoni, Artidoro**, Felix Labelle, Lauren Duan, Anjalie Field, Alan Black, and Yulia Tsvetkov. "Ideological Bias in News on Anti-Government Protests." *Poster presentation at SocInfo* 2020.

- Ahmed, Zeeshan, et al. "Machine Learning at Microsoft with ML. NET." *Proceedings of KDD* 2019.

Preprint
- Lively, Thomas, William Long, and **Artidoro Pagnoni**. "Analyzing Branch-and-Bound Algorithms for the Multiprocessor Scheduling Problem." *arXiv preprint arXiv:1901.07070* (2019).

- **Pagnoni, Artidoro**, Kevin Liu, and Shangyan Li. "Conditional variational autoencoder for neural machine translation." *arXiv preprint arXiv:1812.04405* (2018).

- **Pagnoni, Artidoro**, Stefan Gramatovici, and Samuel Liu. "PAC Learning Guarantees Under Covariate Shift." *arXiv preprint arXiv:1812.06393* (2018).

- Szanto, Aron, Timothy Tamm, and **Artidoro Pagnoni**. "Taint tracking for webassembly." *arXiv preprint arXiv:1807.08349* (2018).

REASEARCH AND WORK EXPERIENCE

Graduate Research Assistant **UW - Zlab** **September 2022 - present**
- Exploring methods to improve efficiency of task-specific language models through knowledge distillation and retrieval

Research Intern **Salesforce Research** **June 2022 - October 2022**
- Developed a pretraining objective for improved controllability of summarization systems with SOTA on QFS datasets

Graduate Research Assistant **CMU/UW - Tsvetshop** **August 2019 - June 2022**
- Identified threat scenarios and best practices in detecting generated text as LMs complexity increases
- Evaluated language models' reasoning abilities about physical event implications
- Developed structured summarization system and a linguistically grounded benchmark for factuality metrics
- Funded by DARPA SemaFor project on detection, characterization, and attribution of falsified news

Software Engineer **Microsoft AI Frameworks** **August 2018 - August 2019**
- Contributed to the development and open sourcing of ML.NET, a library internally built by MSR for the past decade
- Primarily focused on improving model explainability features of the library and building a new API
- Joined MSR project to explore fine-tuning classical ML models (e.g., decision trees) by converting them to neural networks and using backpropagation

Undergraduate Researcher **Harvard NLP Group** **Fall 2017 - Spring 2018**
- Constructed and evaluated latent variable model for neural machine translation relying on conditional VAE
- Explored recent text generation method to generate news articles headlines by editing prototype sentences
- Participated in small seminar with Prof. Rush on recent NLP techniques for text generation, reading and presenting papers

Software Engineer, intern **Microsoft** **May - August 2017**
- Reduced impact of load operations in Azure distributed database SQL Data Warehouse, through on demand construction of new cluster of compute nodes for bulk load operations, this also improved compression quality

PRISE Research Fellow **Harvard - Cadence Design Systems** **June - August 2016**
- Filed three patents on a new method to optimize and automate the design of the layout of Printed Circuit Boards
- Elaborated a new highly parallelizable representation of the problem and developed a heuristic algorithm based on that reached and sometimes improved the performance of current designs

Analyst, intern **Lonsin Capital Hedge Fund** **May - June 2015**
- Assessed companies' distressed assets and debt, analyzed long term effects of bankruptcy and credit restructuring
- Received training on options (independently studied Options Swaps and Other Derivatives, Hull)
- Autonomously started developing an algorithm to assess options' pricing offset with respect to their theoretical value

Marketing, intern **Geely Auto, Chinese Owner of Volvo** **July - August 2015**
- Participated to the organization of a new sponsorship deal for the Chinese National Swimming Team, selected English name for new car models, and produced social responsibility reports

TEACHING AND ACTIVITIES

Teaching Assistant **Harvard Computer Science 1** **Spring 2017 - Spring 2018**
- Directed weekly sections for 20 students, held office hours, graded problem sets and advised groups on final projects

Director of FIP, Alumni Chair **Harvard Woodbridge International Society** **Spring 2015 - Fall 2016**
- Director of FIP (Freshmen International Preorientation), a 5-day Harvard Orientation for 150 international students
- Coordinated a team of 40 leaders, selected among 120 applicants, for the organization of the program
- Initiated a SIG (Shared Interest Group) for international alumni, a club recognized by the Harvard Alumni Association

President **Harvard European Business Group** **Fall 2014 - Spring 2017**
- Invited prominent European political figures and representatives of major businesses to give presentations: Josep Borrell, former President of the European Parliament, and Alberto Festa, former CEO of Bulgari USA

SPORTS

Varsity Team **Fencing** **Fall 2014 - Spring 2016**
- Starter on Harvard Fencing Varsity Team, 2015 Ivy League Champions

Italian National Team **Modern Pentathlon** **Summer 2012**
- Member of the Italian National Pentathlon Team leading it to first victory at the International Budapest Competition 2012
- Ten years of competitive activity, with last four years of solo training

SKILLS AND INTERESTS

- Languages: Italian, French - native; German - intermediate; Chinese - beginner
- Proficient in Python, C/C++, C#, Java, JS, Mathematica, OCaml and SQL