Davide Baldelli

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SUMMARY

PhD Student at MILA and Polytechnique Montréal.

WORK EXPERIENCE

Freelance Machine Learning Engineer, Upwork　　　　　　　　　　June 2024 - Jan 2025
- Delivered a variety of machine learning projects for international clients, consistently earning 5-star ratings for quality, speed, and communication.

Machine Learning Engineer, Loop AI Group　　　　　　　　　　Sept 2023 - Dec 2024
- Co-supervised a master's thesis titled "Self Assessment Tool for Medical Exam Candidates" in collaboration with the University of Padova. Guided the candidate in applying machine learning techniques to develop a self-assessment tool. Assisted in research direction, methodology selection, and technical problem-solving.
- Conducted deep learning project for musical Deepfake detection algorithm achieving 94% of F1 score on a proprietary italian deepfake music dataset.
- Conducted deep learning project for automatic translation of audio data for content creation.
- Implemented statistical and deep learning based time series analysis models to solve demand forecasting.
- Implemented BERT-based email classifier tool for an italian University's administrative office, achieving 98% accuracy.

Data Scientist Consultant, Loop AI Group　　　　　　　　　　Sept 2022 - Sept 2023
- Implemented closed-domain generative question-answering systems on technical topics, exploiting SoTA Pretrained Seq2Seq
Language Models.
- Implemented rule-based and transformers-based text retrievers.

PROJECTS

Some Project　　　　　　　　　　　　　　　　　　　　　　Link to Demo

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EDUCATION

Jan 2025 - Current	PhD in Computer Engineering at **MILA and Polytechnique Montréal** (GPA: 4.0)
	Supervisors: Sarath Chandar, Amal Zouaq
Sept 2021 - Oct 2023	MSc in Artificial Intelligence at **University of Bologna**　(110/110 cum laude)
Sept 2017 - Mar 2021	BSc in Mathematics at **University of Florence**　(110/110)
Sept 2012 - June 2017	Scientific High School at **Liceo Scientifico Guido Castelnuovo**　(96/100)

Publications

Baldelli, Davide et al. (2024). "TWOLAR: a TWO-step LLM-Augmented distillation method for passage Reranking". In: *Proceedings of the European Conference on Information Retrieval (ECIR 2024)*. In Press. URL: https://link.springer.com/chapter/10.1007/978-3-031-56027-9_29.

Govindarajan, Prashant et al. (2025). "CADmium: Fine-Tuning Code Language Models for Text-Driven Sequential CAD Design". In: *arXiv preprint arXiv:2507.09792*. URL: https://arxiv.org/abs/2507.09792.

Skills

Programming	Python (fluent); HTML, CSS, R, MatLab, Minizinc, NetLogo (familiar).
Data Science	Numpy, Pandas, Scikit-learn, Matplotlib, Seaborn, Plotly
Deep Learning	Pytorch, Pytorch-lightning, Tensorflow.
NLP	HuggingFace, Transformers, Prompt Engineer, OpenAI GPT.
Web Development	Flask, Webflow
Miscellaneous	Linux, Shell, LaTeX(Overleaf/R Markdown), Git, Docker, Figma, Blender.
Soft Skills	Time Management, Teamwork, Problem-solving, Documentation, Engaging Presentation.

Leadership & Community Involvement

Leadership in Non-Profit Organization, Belle Parole Arci APS – Florence, Italy   Nov 2023 -
– Involved in founding and leading Belle Parole Arci APS, a non-profit organization.
– Responsible for organizing community events and managing bar operations as part of the organization's activities.
– Emphasized community engagement, cultural enrichment, and team coordination in a non-profit setting.
– Built the website of the organization: belleparoleaps.it.

Languages

English	Professional proficiency
Italian	Native proficiency