Giulia Baldini

Curriculum Vitae

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Work Experience

Aug 2024 – Today — **Machine Learning Engineer**, *HealthSage AI*, Paris, France (remote)
Development and deployment of AI algorithms for medical applications. In particular, creation of algorithms for extracting structured data from unstructured medical reports. This was achieved with a variety of strategies: LLM fine-tuning, prompt engineering, retrieval augmented generation, agents.
Skills: Python, Docker, PyTorch, Hugging Face, LLM fine tuning, Retrieval Augmented Generation, ElasticSearch, CI/CD, Weights and Biases, algorithm design, data engineering.

May 2024 – Jul 2024 — **Research Assistant**, *Heinrich Heine University Düsseldorf*, Essen, Germany
Implementation of various clustering algorithms using Python and C++.
Skills: Python, C++, Gurobi Optimizer, scikit-learn.

May 2021 – Apr 2024 — **Research Assistant**, *Institute for Artificial Intelligence in Medicine, University Hospital Essen*, Essen, Germany
Research and implementation of machine learning techniques in medical imaging and clinical data analysis. This includes segmentation of histopathological whole slide images, image-based survival analysis, automation of data extraction using FHIR, Named Entity Recognition for deidentification, CT scan segmentation and extraction of biomarkers for body composition analysis.
Skills: Python, Docker, PyTorch, TensorFlow, Hugging Face, scikit-learn, FHIR, CI/CD, Weights and Biases, Grafana, Kubernetes, algorithm design and engineering, computer vision.

Apr 2020 – Apr 2021 — **Student Assistant for the "Algorithms for Geometric Data Analysis" Group**, *University of Cologne*, Cologne, Germany
Research on a joint project with the University Hospital of Cologne. Development of methods to predict missing MRI scans of the human brain. Methods used: Clustering, modification of the cGAN Pix2Pix.
Skills: C++, Python, Boost, Pix2Pix, algorithm design and engineering, computer vision.

Dec 2018 – Sep 2020 — **Student Assistant**, *Max Planck Institute for Research on Collective Goods*, Bonn, Germany
Implementation and testing of various oTree apps and attendance to some of the conducted experiments. Investigation and research of some country level indicators. Creation and testing of two R CRAN packages for "Higher Order Risk Preferences" (utilityFunctionTools) and "Minimum Mean Squared Error Treatment Assignment Method Treatment Groups" (minMSE).
Skills: oTree, Django, R, SurveyCTO, Qualtrics, knowledge about server administration, knowledge about behavioral science and experimental economy.

Jan 2020 – Jun 2020 — **Freelance oTree Programmer**
Development of an "effort" study and implementation and monitoring on Heroku and MTurk. Development of a study about regret aversion.

Education

Oct 2022 – Feb 2025	**Doctorate in Medical Sciences**, *Institute for Artificial Intelligence in Medicine, University Hospital Essen*, Essen, Germany **Final Grade**: Summa cum Laude (with highest honors) **Doctorate Thesis**: From Unstructured Data to Knowledge: A Cycle of Data for Quality Improvement in a Large Academic Hospital.
Oct 2018 – Dec 2020	**M.Sc. Computer Science**, *University of Bonn*, Bonn, Germany **Final Grade**: Excellent (1.0) **Master's Thesis**: Mapping Brain Clusterings to Reproduce Missing MRI Scans, winner of the BIG award for outstanding theses.
Sep 2015 – Jul 2018	**B.Sc. Computer Science and Engineering**, *Free University of Bolzano-Bozen*, Bolzano-Bozen, Italy **Final Grade**: 110/110 cum Laude **Bachelor's Thesis**: Capturing Semantic Similarity in Querying User Reviews.
Sep 2016 – Feb 2017	**Semester Abroad (Erasmus+)**, *Polytechnic University of Catalonia*, Barcelona, Spain Learning of Spanish (level B1) and Catalan (level A2.1).

Programming Languages & Tools

Advanced	Python (PyTorch, Hugging Face, TensorFlow, scikit-learn), FHIR, oTree, Django, LaTex, Git, ElasticSearch, Weights and Biases
Intermediate	Docker, Grafana, Javascript, Boost, C++, Java, R
Basic	Kubernetes, Azure, Prolog, Erlang, Ruby, Haskell, PHP

Human Languages

Italian	Mother tongue	
English	Proficient	*IELTS (C1) at Bellerbys College, 2015*
German	Proficient	*German Exam (B2) at the Language School Dr. Juno, 2021*
French	Basic	*Attended a B1.1 course at the Mairie de Paris, 2025*
Spanish	Basic	*No certificate, level B1*
Catalan	Basic	*Català per a principiants (A2.1) at the Polytechnic University of Catalonia, 2016*

Other

Driving License	Class B