Lara **Vignotto**

Computer Science M.Sc. Student · B.Sc. in Biotechnology

Udine (UD), ITALY

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Work Experience

Max Delbrück Center, Berlin Institute for Medical Systems Biology (BIMSB) *Berlin, Germany (remote)*

Deep Learning Research Intern *Jul. 2021 - Dec. 2021*

- The internship focused on using deep learning techniques applied to cancer genomics. I built and trained deep neural networks using PyTorch on genomics data sets to improve clinical variable modeling for cancer samples. I wrote and ran statistical analyses and benchmarks to interpret results, assess performances, and produce images and plots.

Education

University of Udine *Udine, Italy*

Laurea Magistrale in Informatica · M.Sc. in Computer Science *2018 - Present*

- Algorithms and Automated Reasoning track, Data Science path

University of Udine *Udine, Italy*

Laurea in Biotecnologie · B.Sc. in Biotechnology *2012 - 2017*

- Thesis: *Modeling of the Bovine Mitochondrial ATP Synthase and its Interaction with Cyclophilin D*

Curricular Experience

University of Udine, Dept. of Mathematics, Computer Science and Physics *Udine, Italy*

Teaching Assistant for the Computer Vision Course *Feb. 2021 - Jun. 2021*

- Advanced Lab for the Computer Vision course. I developed machine learning projects, namely about convolutional neural networks for the identification and classification of images using PyTorch. My duties included teaching (in English) the laboratory part of the course to university students, and designing and implementing projects of the course using Jupyter Notebooks on Google Colab.
- Topics: Convolutional Neural Networks, Denoising Neural Networks, Autoencoders, Image Classification, Feature Extraction, Transfer Learning, Object Recognition, Semantic Segmentation.
- Github repo: `https://github.com/laravignotto/uni-computer-vision`

University of Udine, Dept. of Medical and Biological Sciences, Biophysics Lab *Udine, Italy*

Bachelor's Thesis Intern *Apr. 2016 - Nov. 2017*

- Title: *Modeling of the Bovine Mitochondrial ATP Synthase and its Interaction with Cyclophilin D*. Experimental thesis project focused on the use of bioinformatics tools for protein modeling and the simulation of molecules interactions.
- Topics and Tools: Protein Modeling, Protein Interaction Simulation, Modeller, ProFit, VMD.
- Thesis' pdf: `https://laravignotto.me/wp-content/uploads/2021/11/vignotto-bsc-thesis.pdf`
- Github repo: `https://github.com/laravignotto/protein-modeling-scripts`

University of Udine, Dept. of Medical and Biological Sciences, Biophysics Lab *Udine, Italy*

Bachelor's Intern *Jun. 2014 - Sep. 2014*

- The internship focused on microarray analysis. Tasks included querying online public databases, using bash and AWK, and the R programming language and its packages.

Skills

Languages	Italian, English
Programming	*Advanced*: Python, R, LaTeX *Beginner*: Matlab, C++, SQL
Python libs	PyTorch, Pandas, Numpy, Matplotlib, BeautifulSoup, Sklearn, TensorFlow, Seaborn, and more
Operating Systems	Linux (Ubuntu), Windows (98–10)
Developer Tools	Git, Jupyter Notebooks, Google Colab, Amazon SageMaker, Visual Studio Code, RStudio, Pipenv