

Angelo Monteux

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Technical Skills

LANGUAGES/TOOLS: Python, Mathematica, C++, SQL, LaTeX, Unix shell, git.

PYTHON PACKAGES: keras, tensorflow, sklearn, numpy, pandas, opencv, jupyter, matplotlib, beautifulsoup.

SKILLSET: machine learning, statistical analysis, data wrangling and visualization.

Work Experience

Artificial Intelligence Fellow

Jan 2019 – present

Insight Data Science, tiny.cc/logohunter

- Developed LogoHunter, a service to automate brand detection in images and videos. Deployed on real-time social media datastreams, it can extract granular information for companies and advertisers.
- Leveraged keras and tensorflow to build fast and scalable object detection model capable of out-of-sample inference.
- Used AWS instances for training and git for system control and code reviews.

Postdoctoral Researcher

Sep 2017 – Dec 2018

University of California Irvine, *particle theory group*

- Discovered highly significant but previously unnoticed anomalies in experimental data. Established international working group to investigate possible explanations.
- Ported previously developed data-mining framework from Mathematica to python/cython for faster inference and analysis. Made available on GitHub and used by other research teams.

Postdoctoral Researcher

Sep 2014 – Aug 2017

Rutgers University, *New High Energy Theory Center.*

- Created data-mining algorithm to discover signal in high-dimensional datasets with hundreds of correlated nuisance parameters. Used MINUIT library to minimize log-likelihood ratios and establish statistical significance.
- Led the way in developing deep learning techniques for particle recognition at the Large Hadron Collider, resulting in ongoing active collaborations in the research group.
- Joined working group to develop framework (first in C++, then python) for quick reinterpretation of experimental searches, building largest analysis database to date. Designed versatile MonteCarlo simulation codebase in python to run jobs on HTCondor parallel cluster (1000 nodes).
- Resolved computational bottleneck by porting collaborator's partial differential equation code from Mathematica to C++, achieving large speed-up (10 – 50×) and ability to finish project.

Relevant projects

Electric car detection

ilmonteux.github.io/EV_charging

- Predicted which households have electric cars with >95% accuracy from time series dataset of power meter readings. Used heuristics and convolutional neural networks in keras.

Chronomaps

ilmonteux.github.io/chronomaps

- What if maps showed travel times instead of distances? Querying Google Maps API, ideated and visualized techniques to deform map so that lengths represent travel times.

Education

Ph.D. Theoretical Particle Physics

Sep 2010 – Jun 2014

University of California, Santa Cruz

M.S. Theoretical Physics

Sep 2007 – Apr 2010

University of Parma, Italy

B.S. Physics

Sep 2004 – Sep 2007

University of Parma, Italy