Giada Carminati

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SKILLS

LANGUAGES

C++ • C • Shell Scripting • Python
MATLAB (some exposure)

TOOLS

UNIX/Linux • MySQL • SciPy Stack
Natural Language Processing (NLTK)
Flask • Bootstrap • jQuery
LaTeX • ROOT

EDUCATION

UNIVERSITY OF BOLOGNA

PH.D. IN PHYSICS
May 2010 | Bologna, Italy

M.SC. IN PHYSICS
(5-year degree equivalent to B.S. + M.Sc.)
Oct 2005 | Bologna, Italy

COURSEWORK

COURSERA

- Machine Learning

GRADUATE

- Advanced C++ and Object-oriented Programming
- Computer Networks
- Advanced Numerical and Computer Methods for Particle Physics

UNDERGRADUATE

- Probability and Statistics
- Numerical Methods
- Data Analysis for Physics
- Unix Tools and Scripting
- C++ and Object-oriented Programming

EXPERIENCE

INSIGHT DATA SCIENCE FELLOW

Sep 2014 | Palo Alto, CA

- Created *WhoDoesMyHair.com*, a web application to recommend the highest rated hair stylists in hair salons.
- Utilized Python and MySQL to parse, store and query the Yelp Academic Dataset.
- Built custom recommendation engine applying the Python Natural Language Processing toolkit (NLTK) and the Stanford Named Entity Recognizer (NER).
- Deployed interactive front-end with Flask, Bootstrap and jQuery, hosted on AWS.

UNIVERSITY OF CALIFORNIA, IRVINE POSTDOCTORAL RESEARCHER

2010 – 2014 | Irvine, CA

- Designed C++ software based on multivariate linear regression techniques to validate neutrino oscillation models.
- Recursively performed statistical hypothesis testing to confirm the null hypothesis after each modification in the analysis code.
- Designed an innovative online software trigger (data filter) in C and C++ to detect neutrino particles coming from the Sun core for a Japanese physics experiment.
- Coordinated the software engineering team in Japan for installation and integration of the trigger in the online data acquisition system.
- Created software in C++ and bash script to monitor online network performance of the trigger system and to detect disruptions in data acquisition.
- Developed graphical software in C++ and ROOT (object-oriented C++ framework for high energy physics) to visualize trigger algorithm performance.
- Co-authored 22 peer-reviewed journal articles with a total of 480 citations and presented findings at 4 international conferences.

UNIVERSITY OF BOLOGNA AND INFN RESEARCH ASSISTANT

2005 – 2010 | Bologna, Italy

- Designed a binary classification model in C++ and ROOT to distinguish between two elementary particle, with 7% false discovery rate.
- Created, developed and maintained *MUPAGE*: a novelty Monte Carlo simulation software package in C++ to simulate particles produced in the atmosphere and arriving on an underwater neutrino telescope.
- Performed graphical and statistical analysis based on linear regression to constrain astrophysics models for particle acceleration in the universe, using C++ and ROOT.
- Co-authored 11 peer-reviewed journal articles with a total of 206 citations and presented findings at 2 international conferences.

NIKHEF VISITING RESEARCH ASSISTANT

2008 – 2009 | Amsterdam, The Netherlands

- Designed a classification algorithm in C++ and ROOT to distinguish between different particles for an astrophysics experiment in France.