BrunoBenkel

Web version

Contact

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github.com/bleaktwig

Languages

Native or Bilingual:
Spanish, English

Elementary:
Italian, Norwegian,
Chinese

Programming

Expert:
C, Python, Java

Proficient:
Bash, C++, Haskell

Elementary:
JS, MIPS Assembly, R

Tools & Libraries

Linux
Git
Python data analysis
(numpy, keras, etc.)
CERN ROOT
EPICS
LaTeX
QT + PySide2
Gimp & Inkscape

Employment

2023–Now **INFN Tor Vergata** — Rome, Italy
Postdoc EIC dRICH Online Reconstruction Developer

2018–2023 **CCTVal** — Valparaíso, Chile
HEP Software Developer + R&D Computer Engineer

- Developed the standard High Energy Physics (HEP) analysis toolset used by CLAS12 Run Group E.
- Lead the Forward Micromegas Tracker alignment team, developing both detector alignment and offline reconstruction software.
- Lead a Drift Chambers reconstruction software optimization team, and optimized a Runge Kutta 4 implementation to improve computing speed.
- Developed an EPICS-based slow controls system for the CLAS12 Run Group E's double target system.
- Lead a team in the development of configuration, calibration, alarms, and front-end systems for a mechanical ventilator software in the face of a shortage during the COVID19 pandemic.
- Developed blockchain-based software for a small-scale energy democratization project.

2020–2021 **EntrepreneurX** — Remote
Technology Consultant

- Developed BDM: a blockchain-based payment processing technology.
- Provided design and technology advice on projects.

2020 **Upwork** — Remote
Freelance Software Developer

- Built a python API to connect input from an electroencephalography scanner to that of an eye movement sensor.
- Developed software for a python application that connects several IoT devices from different manufacturers.

2018 **UTFSM** — Valparaíso, Chile
Artificial Intelligence UTA

- Supervised and evaluated students' code for the course's projects.
- Assisted the teacher in test design and evaluation.

2017–2018 **w/ Ben Tatum** — Los Angeles, US
Field Service Engineer

- Installed electricity and computer networks at residential and commercial buildings in Los Angeles.

2016–2018 **UTFSM** — Valparaíso, Chile
Computer Architecture UTA

- Lead the course's teaching assistants.
- Taught weekly practical classes in tandem with professor's theoretical ones.
- Designed, supervised, and evaluated monthly hardware laboratory work.

Education

2021–Now **M.Sc.** in High Energy Physics — UTFSM, Chile

2017–2019 **Title (M.Sc. equivalent)** in Computer Engineering — UTFSM, Chile

2012–2017 **B.Eng.** in Computer Engineering — UTFSM, Chile

Publications

2023 Co-author in **Double-pion electroproduction off protons in deutreium: quasi-free cross sections and final state interactions** CLAS Collaboration

2023 Co-author in **Beam spin asymmetry measurements of deeply virtual π^0 production with CLAS12** CLAS Collaboration

2023 Co-author in **Strong interaction physics at the luminosity frontier with 22 GeV electrons at Jefferson Lab** CLAS Collaboration

2023 Co-author in **Measurement of the helicity asymmetry E for the $\gamma p \to p\pi^0$ reaction in the resonance region** CLAS Collaboration

2022 Co-author in **First CLAS12 measurement of DVCS beam-spin asymmetries in the extended valence region** CLAS Collaboration

2022 Co-author in **A multidimensional study of the structure function ratio $\sigma'_{LT}\sigma_0$ from hard exclusive pi+ electro-production off protons in the GPD regime** CLAS Collaboration

2022 Co-author in **First Measurement of Λ Electroproduction off Nuclei in the Current and Target Fragmentation Regions** CLAS Collaboration

2022 Co-author in **Observation of Correlations between Spin and Tranverse Momenta in Back-to-Back Dihadron Production at CLAS12** CLAS Collaboration

2022 Co-author in **Alignment of the CLAS12 central hybrid tracker with a Kalman Filter** CLAS Collabration

2022 Co-author in **Observation of Azimuth-Dependent Suppression of Hadron Pairs in Electron Scattering off Nuclei** CLAS Collaboration

2022 Co-author in **Exclusive π^- Electroproduction off the Neutron in Deuterium in the Resonance Region** CLAS Collaboration

2022 Co-author in **Beam-Recoil Transferred Polarization in K^+Y Electroproduction in the Nucleon Resonance Region with CLAS12** CLAS Collaboration

For further details, you are welcome to check the web version at bleaktwig.github.io/cv/.