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

2018–Now 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

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 Lambda 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/.