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Leonardo C. Ribeiro

EDUCATION

University of California, Berkeley — *B.S. Materials Science and Engineering; B.S. Nuclear Engineering*

AUGUST 2017 - MAY 2021, BERKELEY, CA

Stanford University — *Machine Learning Course*

SUMMER 2020, online

See github for certificate.

Tsinghua University — *Global Summer School*

SUMMER 2020, online

See github for certificate.

SKILLS

- **Cathodic Protection**
  - Working knowledge of galvanic and impressed current systems for corrosion mitigation
- **Computer-aided design**
  - FreeCAD - extensive knowledge, especially **Finite Element Analysis (FEA)**
  - AutoCAD - some experience
  - Technical drawing rules and conventions
- **Programming/OS**
  - Python - extensive knowledge
  - MATLAB/Octave - extensive knowledge
  - C++ - working knowledge, especially **ROOT** data analysis framework
  - All of the main supervised and unsupervised machine learning algorithms
  - Linux and Windows
  - Excel
- **Language Skills**
  - English - fluent
  - Portuguese - fluent
  - Spanish - intermediate
  - Italian - beginner
  - Outstanding writing skills (see awards).
- **Laboratory and field experience**
  - Corrosion Monitoring - NACE criteria for corrosion, testing procedures for CP components, current rectifiers
  - Metallurgy - Rockwell hardness testing, tensile testing, furnace, metallographic sample preparation, diffraction grating, strain gauge

- Imaging/radiation detection - STEM, EDS, diffractometer, neutron assay analysis, scintillator, gas counter, semiconductor detector, photomultiplier (see Publications)
- Electronics - LaunchPad (Arduino), op-amp, oscilloscope, pulse/charge generator, soldering
- Chemistry - cathodic and anodic polarization testing, gas/liquid chromatography, fluorescence/emission spectroscopy

EXPERIENCE

V&A Consulting Engineers, Oakland, CA — *Graduate Engineer*

2021 - PRESENT

- My main responsibility is to design, test, and produce reports regarding cathodic protection (CP) systems for metallic structures under risk of corrosion.
- Additional projects include Data Science, Flow Monitoring, and Condition Assessment. See github for V&A-provided resume.

Lawrence Berkeley National Lab, Berkeley, CA — *Research Assistant*

FALL 2019 - SPRING 2020

- **Bay Area Neutron Group (BANG):** research group focused on radiation detection
- My role was to investigate the gain stability of photomultiplier tubes used in conjunction with scintillation detectors. I wrote an honors senior thesis about my experiment (see Publications)

Nuclear Non-Proliferation Education and Research Center (NEREC), Daejeon, South Korea — *Research Fellow*

SUMMER 2019

- Think-tank associated with the Korean Advanced Institute of Science and Technology (KAIST)
- The fellowship entailed one month of research followed by a poster presentation at the NEREC Conference on Nuclear Nonproliferation
- My research assessed the effect of domestic policies such as utility privatization on the spent nuclear fuel issue in the Korean Peninsula (see Publications)

Lawrence Berkeley National Lab, Berkeley, CA — *Research Assistant*

SPRING 2019

- **Project ATLAS:** the design of semiconductor detectors for the Large Hadron Collider
- My role was to set up thermomechanical simulations using FreeCAD FEM in order to assess the structural integrity of ATLAS microelectronics

PUBLICATIONS

- (2020) Mohamed Abdulhameed, Leonardo Francisco Moraes Correia Candido Ribeiro, Nakita Pradhan. *"Can privatization solve the Spent Nuclear Fuel issue in South Korea?"*, in 2019-2020 NEREC Annual Report. Daejeon: Nuclear Non-Proliferation Education and Research Center.
    - https://www.researchgate.net/publication/339055606_Can_Privatization_Solve_the_Spent_Nuclear_Fuel_Issue_in_South_Korea
- (Unpublished) Leonardo C. Ribeiro. *"Photomultiplier Short-Term Stability for Radiation Detection"*. Senior Honors Thesis at UC Berkeley (see git for full text).

AWARDS

- Frei Orlando Essay Contest, 1st place, Brasília, Brazil
- OBMEP Brazilian Math Olympiad, Gold Medal, Rio de Janeiro, Brazil
- OBFEP Brazilian Physics Olympiad, Gold Medal, Brasília, Brazil