YANALL BOUTROS

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Chico, CA

EDUCATION

University of California, Santa Cruz September 2016 - August 2020

- Bachelor of Science (B.S.) in Physics
- Bachelor of Science (B.S.) in Computer Science
- GPA: 3.40
- Electives: Advanced Programming, Computational Physics, Artificial Intelligence, Quantum Computing
- Communication: A's in CSE115-A: Software Engineering, PHYS-182: Scientific Communication

TECHNICAL STRENGTHS

Computer Languages	Python, C/C++, Java, Bash, Prolog, Perl, Ocaml, Smalltalk, Scheme, Haskell, JavaScript
Markup Languages	LaTeX, Markdown, HTML
Software & Tools	ViM, GitHub, Docker, Matplotlib, Numpy, Pandas, Gimp, Unix, Gnu/Linux, Sci-Kit-HEP, SciPy, TensorFlow, MS Office, LibreOffice, OpenOffice
Music	Classical and Jazz musician for Piano, Violin, and Trombone.

RELEVANT WORK EXPERIENCE

Self Employed November 2020 - January 2021
Contract Data Recovery Services *Chico, CA*

- Built and maintained a High Performance Computer [HPC] to brute-force attack and recover an encrypted file
- Determined computational feasibility by deriving combinatorics from unique client information
- Wrote custom Haskell code to brute-force private key

University of California, Santa Cruz August 2018 - August 2020
Undergraduate Research Assistant *Santa Cruz, CA*

- Conducted research in the area of categorizing events with Machine Learning, from data created by simulating such events in the Large Hadron Collider. Written in Python 3.
- Benchmark Python workflow for particle physicists by streamlining and packaging various tools such as Pythia, Pyjet, and TensorFlow
- Coordinated with new research assistants, providing technical support for learning Python 3, Bash and GNU/Linux systems

TEACHING EXPERIENCE

Self Employed October 2019 - Present
Private Tutor *Santa Cruz and Chico, CA*

- STEM: Taught conceptual physics and pre-calculus to high-school and college students
- Piano: Taught piano and introductory music theory to ages five through twenty

University of California, Santa Cruz January 2019 - April 2019
Teacher's Aid *Santa Cruz, CA*

- Graded mechanics homework for a class of 200 students
- Coordinated with professor to develop teaching aids on topics students struggled with most

LSS - Learning Support Services March 2018 - July 2018
LSS Learning Assistant *Santa Cruz, CA*

- Tutored Physics: Waves and Optics, and Electromagnetism
- Tutored Computer Science: Introduction to Data Structures

ACADEMIC PROJECTS AND ACHIEVEMENTS

University of California, Santa Cruz August 2018 - August 2020
Undergraduate research Assistant *Santa Cruz, CA*

- Unify and dockerize modules which simulate and model particle interactions at the Large Hadron Collider (LHC)
- Benchmark data generating framework.
- Proposed different neural network architectures such as feed-forward and convolutional neural networks. Explored hyper-parameter study

University of California, Santa Cruz May 2019 - June 2019
Undergraduate Researcher - Senior Project in Computational Physics *Santa Cruz, CA*

- Created a 2D Ising Model Simulation with varying definitions for an adjacent site
- Animates the behavior of an NxN lattice of spin-up or spin-down particles in a Monte Carlo simulation
- Demonstrates quantitatively and qualitatively, via graphs and animations, at what k_bT a phase transition occurred

University of California, Santa Cruz May 2020 - June 2020
Computer Systems Engineer - Senior Project *Santa Cruz, CA*

- Wrote a multi-threaded HTTP server with load balancer, log writing, and health-check service with file descriptors only
- Maintained design documents throughout the development process

University of California, Santa Cruz October 2019 - December 2019
Back end Engineer - Senior Project in Software Engineering *Santa Cruz, CA*

- Practiced principles of AGILE Management (Scrum) to develop an app with a team of four
- Used Python, Bash, and Regex to automate web-scraping information to store in a database

REFERENCES

References will be provided upon request.