YANALL BOUTROS

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Baltimore, MD

EDUCATION

University of California, Santa Cruz September 2016 - August 2020

- Bachelor of Science (B.S.) Physics, B.S. Computer Science. Department GPA 3.40
- Electives: Advanced Programming, AI, Computational Physics, Quantum Computing

TECHNICAL STRENGTHS

Python, C/C++, Unix, GNU/Linux, PostgresSql, Scientific Communication, Mathematics, VIM Debugging, Testing, Modeling, Statistics, Data Structures, Data Analysis, Data Validation, Kafka Data Visualization, Artificial Intelligence [AI], Unreal Engine, Simulations, Tex, HTML, Docker, Numpy, TensorFlow, Research, Machine Learning, Git/GitHub, Regex, Matplotlib, NodeJS

EXPERIENCE

DCS Corp October 2021 - Present
Software Engineer *Aberdeen, MD*

- Supported Army Research Lab Human Research and Engineering Directorate
- Made Automatic Speech Recognition [ASR] and Natural Language Processing [NLP] pipeline
- Made Kaldi Vosk and Whisper Speech-To-Text [STT] tool with supervised autocorrections
- Made tool to accelerate corrections to update large language model [LLM] and lexicon
- Finetuning GPT-J and OPT models for entity extraction and sentiment classification
- Integrating Computer Vision algorithms to compare segmentation and classification efficacy
- Made TensorFlow EEG Net binary classifier 70% accurate in associating physio data with firing events
- Made Unreal Engine component to provide subsystem failures in simulated NGCV vehicles
- Fixed BMP Animation issues caused by object's physics body map
- Integrated Kafka/PostgreSQL Producer/Consumer in Component Health System, transcription tool

Freelance Contractor: FullSend Network [FSN], Digital Asset Management Group [DAMG]
October 2021 - September 2022
Part-Time Manager, Software Engineer *Baltimore MD*

- Made back-end web database in PostgreSQL for Decentralized Exchange trade bot in NodeJS for DAMG
- Implemented Neural Radial Fields and ZeroShot. Made transforms matrix from 2D drawings for FSN
- Setup dedicated local Jax/Dalle/Imagegen server, researched Text $\rightarrow$ 2D $\rightarrow$ 3D generation
- Streamlined conversion from artists rendition to video game asset

Santa Cruz Institute for Particle Physics [SCIPP] August 2018 - August 2020
Undergraduate Research Assistant Intern *Santa Cruz, CA*

- Simulated interactions in the Large Hadron Collider. Optimized code for hummingbird computer cluster
- Streamlined, benchmarked, and dockerized Python workflow and modules for simulating particle physics
- Validated data by comparing measurements to theory from Feynman Diagrams and Standard Model
- Implemented feed-forward and convolution neural networks in TensorFlow. Tweaked hyper-parameters
- Achieved 80% accuracy in binary classification of $T\overline{T}$ or ZZ parent particles
- Trained new research assistants in Python 3, provided technical support