FAAIQ WAQAR

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EDUCATION, AWARDS, & AFFILIATIONS

Bachelor of Computer Science, Electrical & Computer Engineering (Minor: Mathematics) | OREGON STATE UNIVERSITY | Corvallis, OR | Expected 2022 | Undergraduate Research Student Award, Deans List

Relevant Courses and Trainings: Machine Learning | High Performance Computer Architecture | Multimedia Systems | Compilers and Translators | Operating Systems | Analysis of Algorithms | Deep Learning [Planned]

President of Engineering Student Council | OREGON STATE UNIVERSITY | Current | Lead communications, resources, & funding for 65+ OSU engineering clubs. Design and implement ENGR wide student advisory board

EXPERIENCE

Research Assistant | **DR. SIMON: MOFS AND MACHINE LEARNING TEAM** | Corvallis, Or June 2020 - Current

Applying machine and deep learning techniques to the prediction and analyzation of Metal Organic Frameworks (MOFs), nano-porous materials used in applications such as gas storage, separation, and sensing.

- Development of Graph Neural Network regression model for low-pressure CO2 uptake in CoRE database
- Engineer bagging regression models to handcrafted features for low variance prediction of CO2 uptake
- Implement Julia package for conversion of Crystalline Information into usable graphs for GNN
- **Publication:** Towards explainable message passing networks for predicting carbon dioxide adsorption in metal-organic frameworks – A. Raza, **F. Waqar**, A. Sturluson, C. Simon, X. Fern - arXiv:2012.03723v1

Software Developer | **CENTER FOR APPLIED SYSTEMS & SOFTWARE** | Corvallis, OR March – September 2020

Implemented large scale ASP.NET software solutions for ODEQ Clean Fuels Program, used to report transportation fuels used in Oregon. Development in SCRUM iterations with sprints tracked in Azure DevOps.

- Implemented primary Greenhouse Gas (GHG) Reporting utilities on Data, Business, API and Front Layers
- Designed GHG API functionalities in C# with usage for rollup data aggregation and emissions calculation

Data Administrator | **AUSTIN FAMILY BUSINESS PROGRAM** | Corvallis, OR 2018 - 2020

Providing solutions to operational data driven decisions via. Excel and VBA scripting for retainment & success

- Aggregated and visualized 7+ years of company event data, deriving trends for future decision making through decision tree classification model, and presenting on findings at FB360 executive panel

Research Intern | **OPEnS LAB** | Corvallis, OR February– September 2019

Served in research and development for Evaporimeter, single economical sensor device used for collection of real-time temperature, humidity, rainfall, and evaporation data derivable to the internet of things (IoT).

- Manufactured and implemented improvements to fiberglass-wick preparation and bell siphon design in Fusion for improvement of device accuracy under heavy rainfall conditions.
- Designed strain gauge calibration and compression algorithms in C++ for use in device detection of evaporation invariant of hardware error caused by environmental temperature increase.

Client Computing Group Intern | **INTEL via BUSINESS EDUCATION COMPACT** | Hillsboro, OR 2016–2017

Managed organization's premiere support services for large account error details including Comcast. Moved error process request into database, routed to specialized team, and closed resolved tasks.

- Logged debugging on Xfinity X1 chipsets and collaborated with Client Computing Engineers to understand device debugging process for Intel Premier Support.

TECHNOLOGY

Languages: C, C++, Python, Javascript, R, System Verilog, Julia, Matlab, Haskell, Assembly, SQL

Tools: Atmel Studio, LTSpice, PyTorch, ModelSim, Quartus Prime, Fusion, Node.js, MongoDB, TensorFlow

Hardware: FPGA Devices, Microcontroller Devices, Arduino Devices, Adafruit Sensors, AVR Devices