Omar Ali

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Highlighted Projects

EHR Clinical Database Harmonization: Python, SQL, XML, NoSQL, AWS Melissa Informatics
· Overhauled ETL legacy pipelines for tenfold SQL DB scaleup & extensive schema changes December 2018
· Remediated data integrity for patient IDs, creating graphics to illustrate data corruption cause and scope

NLP Histopathology Scan Digitization: R, SQL, ML, HIPAA Melissa Informatics
· Independently wrote prototype for medical file NLP processing, including advanced statistics March 2019
· Compared multidimensional feature clusters to differentiate medical forms using matrix algebra

Image Processing Numerical Integration Application: Python McCampbell Analytical
· Wrote application to numerically integrate graphic to correct erroneous software calculations August 2018
· Includes GUI (tkinter OOP), automatically generating report using multinomial calibration and OCR

Clinical FDA Early Phase I GBM Gene Therapeutic: Method Development, QA/QC Northwestern
· Set up new multi-dimensional High Resolution ICP-MS for trace-level human tissue analysis August 2017
· Wrote FDA compliant SOPs, set up data pipelines, and compiled statistical validation package & graphics
· Customized instrument sample injection algorithms, lowering detection limit tenfold, using R diagnostics

Experience

FreightVerify: November 2019 – May 2020
AI Engineer San Francisco, California
· Wrote AWS geospatial aggregation mapping tool with anomaly detection SQL queries & Python graphics
· Evaluated infrastructure tools for scaling AI, including Hadoop, AWS, Google Cloud Compute, and git
· Incorporated physics calculations into logistical tracking metrics for next generation ETA calculations

Code for San Francisco: July 2019 – October 2019
ShelterTech Dev & Analytics Team (Volunteer)
· Critiqued CA Department of Motor Vehicles website through DMV Strike Team user interface testing
· Set up search engine for ShelterTech website hosting compilation of homelessness resources in SF

Melissa Informatics: November 2018 – June 2019
Knowledge Engineer (Data Engineer) Berkeley, California
· Managed scope, deadlines, and client communications for Parkinson's research health informatics projects
· Integrated EHR databases, debugging Python scripts, scaling up tenfold, and optimizing NoSQL queries
· Prototyped histopathology parsing tool in R, using ML-NLP analysis, shell scripting, & database export

McCampbell Analytical: August 2017 – October 2018
Research & Development Analytical Chemist Pittsburg, California
· Developed methodology for GC, GC-MS, and HPLC trace-level analysis of biologically-active compounds
· Wrote Python image processing program to correct faulty instrument calculations, including OOP GUI
· Guided quantitative development of scientific calculations for novel experimental setups, including DB
· Received praise for clear technical communications, answering clients' questions on advanced topics
· Wrote SOPs, trained staff, and guided quantitative quality control for new analytical methodology

Northwestern University: September 2016 – August 2017
Quantitative Bio-Element Imaging Center, Research Technologist II Evanston, Illinois
· Spearheaded clinical early phase I FDA statistical validation setup for gene therapeutic glioblastoma trial
· Trained graduate students in method development, instrument operation, and data quantification in R
· Operated laser ablation ICP-MS imaging, including troubleshooting multi-dimensional time series data
· Maintained laboratory WordPress site, performed billing, and restocked lab via university PO system
· Performed elemental proteomic analysis, and single-cell ICP-MS analysis, including data processing

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Experience (continued)

University of Illinois, Urbana-Champaign: *Various Titles Held* August 2008 – August 2016

Center for Chemistry and Technology, Assistant Analytical Chemist March 2014 – August 2016

· Wrote script to process multi-dimensional QC data, reducing several hour workup to instantaneous results
· Increased throughput for ICP-OES four-fold, and sensitivity for Total Organic Carbon analysis by 28%
· Headed capital purchase committee, establishing technical specs and coordinating demonstrations
· Successfully isolated part-per-billion level contaminant through meticulous method development
· Trained coworkers in data analysis, lab technique, instrument operation, and troubleshooting

Environmental Science Department, Biogeochemistry Lab Assistant October 2012 – June 2013

· Headed method development for trace-level extractions from both biological and environmental matrices
· Set up and maintained anaerobic cultures for cellular respiration study, including analytical monitoring
· Independently set up new lab space, including equipment, organization, and consumables & reagents
· Compiled trace methylmercury analysis data, quantifying biogeochemical reaction kinetics in Excel

Illinois State Geological Survey, Geochemistry Lab Technician February 2010 – October 2012

· Wrote script for multi-modal geochronology model quantification and visualization program using VBA
· Recovered corrupt data from destructive analysis by programming customized instrument acquisition
· Increased sample throughput 30% by starting timestamped logbook to eliminate instrument idle time
· Interpreted inverse logarithmic calibration curve parameters, adapting new quality control criteria
· Operated High Resolution Multi-Collector Magnetic Sector Mass Spectrometer for carbon dating
· Wrote and presented research poster at symposium, outlining research methods and conclusions
· Trained new staff to handle extremely toxic acids in darkroom, run statistics and validate data

Institute for Genomic Biology, Student Research Assistant August 2009 – November 2009

· Ran phytopathology DNA extractions, PCR amplifications, and electrophoresis for clean energy research
· Performed bacterial cultures using aseptic technique and maintained living specimen
· Maintained laboratory documentation, and prepared reagents and consumables

Crop Sciences Department, Lab Maintenance Student Hourly August 2008 – May 2009

· Assisted in gel electrophoresis for hybridization experiment between nutrient-rich and robust crop strains
· Prepared samples for both HPLC nutrient analysis and inorganic elemental characterization
· Maintained laboratory supplies, performed data entry, and cross-pollinated specimen

Education

University of Illinois at Urbana-Champaign: December 2012

Bachelor of Science, Mathematics GPA: 3.24/4.00
Bachelor of Science, Chemistry
· Dual Degrees

Technical Skills

Programming: Python (keras, pandas, numpy, scikit, pyspark, matplotlib), R (dplyr, tidyverse), VBA
Database: MySQL, PostgreSQL, NoSQL · **OS:** Linux, Windows · **Regulatory QA:** FDA, HIPAA, EPA
Dev: Git, Airflow, Bash · **Web:** Flask, XML, JSON, HTML · **Cloud:** AWS (Sagemaker, RDS), GCP
Stats: Machine Learning/Deep Learning, Logistical Regression, Linear Algebra, Time Series, NLP
Biology: DNA Extraction, PCR, Gel Electrophoresis, Syringe & pipetting technique, Aseptic culturing
Chemistry: HR-ICPMS, IRMS, GCMS, HPLC, Gamma Spectroscopy, Hydrofluoric Acid, Glass Welding