RAUL G. MARTINEZ

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WORK EXPERIENCE

Integration Research Associate 2, Illumina

January 2019 – Present San Diego, CA

- Executed integration and systems support for Next-Generation Sequencing (NGS) platforms along different stages of product development.
- Created data pipelines (with both R and Python) for aggregation, analysis, and visualization (including Dashboards) of NGS instrument data including primary/secondary metrics and diagnostic logs.
- Developed algorithms for image processing, manipulation, and transformation using python libraries (NumPy, SciPy, Scikit-Learn, PIL).

Integration Research Associate 1, Illumina

July 2018 – December 2018 San Diego, CA

- Collaborated cross-functionally to move forward new integration testing plans (optics,hardware,software, and chemistry components) and Design of Experiments (DOEs) for critical parameter analysis.
- Implemented data collection strategies with QC targets for NGS instruments in order to monitor optical performance across the fleet over time.

Pharma Technical Development Intern, Genentech

February 2018 – July 2018 South San Francisco, CA

- Contributed with the virology group on process validation and viral clearance studies for the production of therapeutic monoclonal antibodies.
- Investigated virus titers by implementing DOEs, cell culture, infectivity assays, qPCR, and virus purification by following GLP and GDP standards.

Support Specialist, Dotmatics

December 2017 – February 2018 San Diego, CA

- Collaborated with Developers and Application Scientists to maintain active learning on software applications and scientific needs for the product suite.
- Delivered solutions to a high number of customer inquiries by testing software UI and querying/modifying relational databases using SQL.

Data Analyst, Retrovirox

May 2016 – July 2017 San Diego, CA

- Implemented fast turn-around data analysis and processing workflows for high-throughput screening (with FACS Flow Cytometry) of hundreds of novel small-molecules with antiviral and other activities.
- Facilitated data handling and documentation (i.e. aggregation, backup and management) for R&D experiments with script automation and by authoring Standard Operating Procedures (SOPs).

RESEARCH AND PROJECTS

Non-Invasive Ultrasonic Muscle Force Sensor

September 2016 – May 2017 San Diego, CA

- Developed a proof of concept breadboard prototype of a non-invasive ultrasonic muscle force sensor.
- Analyzed ultrasound wave signals pulsed with small piezoelectric transducers across agar gels with custom Matlab code for waveform feature extraction, LabVIEW simulations, and lab instruments (i.e. Function Gen, Oscilloscope).

Identifying Oncogene-Specific Essential Genes

January 2016 – June 2016 San Diego, CA

- Evaluated a bioinformatics prototype, with R language statistical methods based on distributional entropies and kernel-based density estimators, to find drug sensitivity profiles that match patterns of gene expression.
- Listed genetic dependencies using mutual information analysis (over 10,000 variables) using the Broad Institute Cancer Cell Line Encyclopedia.

EDUCATION

Masters Degree in Data Science and Engineering

September 2019 – Present

University of California, San Diego
(June 2021)

Bachelors Degree in Bioengineering: Biosystems

October 2014 – June 2017

University of California, San Diego
Minor: Entrepreneurship and Innovation

PROFESSIONAL SKILLS

- Domain Related

Data Visualization | Data Mining | Data Management | ETL Processes | Neural Networks | Statistics | Machine Learning | Unstructured Data | Hadoop

- Programming

Python | R | Matlab | C/C++ | PyTorch | SQL | APIs | Bash Scripting | HPC Cluster | Object Oriented

- Computer Software

Git | Tableau | Denodo | SAS JMP | Amazon S3 | PostgreSQL | LabVIEW

RELEV. COURSEWORK

Machine Learning | Data Analysis Using Hadoop and Spark | Probability & Statistics Using Python | Data Management Systems | Python for Data Analysis | Modeling & Computation Bioeng. | Intro Computer Prog. & MATLAB

ACHIEVEMENTS

- Chancellor's Associate Scholar - UCSD (2014-2017)
- Community College Scholarships - "ASO Campus Involvement" and "Neva Smith" (2014)