

## EMMANUEL R. YERA

### QUALIFICATION SUMMARY

Ph.D. in Biological and Medical Informatics, specializing in Bioinformatics and also highly experienced in Machine Learning and Natural Language Processing with expertise in applying and developing computational methods to analyze diverse sets of data.

- Programming: Python, C, Java, PHP, and Javascript
- Databases Query/Storage: SQL and MySQL
- Distributed computing: Condor, Sun Grid, and Xgrid
- Statistical analysis: R

### EDUCATION

University of California, San Francisco

**Ph.D. in Biological and Medical Informatics with a designated emphasis in Bioinformatics** **2013**  
Dissertation: "Rationalizing Drug Pharmacology based on Computational Methods"

San Francisco State University

**M.S. Candidate in Computer Science** **2008**  
Thesis: "GenomExplorer: genomic data cancer visualization"

San José State University

**B.S. in Computer Science** **2005**  
Minor: Mathematics

### RESEARCH AND PROFESSIONAL EXPERIENCE

Quid

**Data Scientist** **June 2013 – Present**

- Prototyped a platform that enabled users to analyze large amounts of unstructured news data and implemented algorithms to detect significant events and news article popularity
- Conceptualized and implemented an algorithm to compute semantic similarity between tweets using natural language processing and deep learning
- Investigated diverse sets of data such as credit card transactions, automotive parts, NFL players athletic ability, and stock data to see what actionable insights can be obtained using machine learning and statistical methods

University of California, San Francisco – Department of Biological and Medical Informatics

**Ph.D. Candidate**

Primary Investigator: Ajay N. Jain **July 2009 – May 2013**

- Developed novel statistical framework for combining information from multiple observations and sources and applied it to predict protein targets of small molecules that can potentially lead to undesirable side-effects
- Investigated and implemented natural language processing methodology to draw relationships between small molecules based on clinical effects data present in public resources

University of California, San Francisco – Department of Biological and Medical Informatics

**Ph.D. Student**

**July 2008 – June 2009**

- Implemented a dynamic programming algorithm to measure the similarity between enzymes, investigated distributed computing platform for folding of RNA, and improved pipeline to analyze next-generation malaria sequence

University of California, San Francisco – Cancer Center

**Research Assistant**

Primary Investigator: Colin Collins & Pamela Paris **July 2007 – June 2008**

- Employed machine language methodology and algorithms to genomic data to predict cancer patient outcome
- Designed and implemented an AJAX based visualization tool to aide in the analysis of cancer genomic sequence data

San Francisco State University

**Graduate Student**

Primary Investigator: Rahul Singh

- Implemented a graph-based algorithm and a novel similarity metric to compute the similarity between small molecules

**June 2005 – June 2007**

SELECTED PUBLICATIONS

**E.R. Yera**, A.E. Cleves, and A.N. Jain. Prediction of off-target drug effects through data fusion. Pacific Symposium on Biocomputing, pp. 160-171, 2013.

**E.R. Yera**, A.E. Cleves, and A.N. Jain. Chemical Structural Novelty: On-Targets and Off-Targets. Journal of Medicinal Chemistry, pp. 6771-6785, 2011.

D. E. Almonacid, **E. R. Yera**, J. B. O. Mitchell, and P.C. Babbitt. Quantitative Comparison of Catalytic Mechanisms and Overall Reactions in Convergenly Evolved Enzymes: Implications for Classification of Enzyme Function. PLoS Computational Biology, March 12, 2010.

SELECTED CONFERENCE PRESENTATIONS

Biological target identification through combination of 3D molecular similarity and lexical similarity of clinical effects. American Chemical Society Spring National Meeting. New Orleans, LA. April 2013.

Framework for systematic prediction of pharmacologically relevant targets of small molecules. American Chemical Society Spring National Meeting. San Diego, CA. March 2012.

Determining molecular similarity for drug discovery using the wavelet riemannian metric. The Sixth IEEE Symposium on Biotechnology and Bioengineering. Washington, DC. October 2006.

AWARDS

University of California, San Francisco School of Pharmacy Dean's Recognition for Excellence in Teaching

National Science Foundation Graduate Research Fellowship Honorable Mention

Ford Foundation Fellowship Honorable Mention

First Place, College of Science and Engineering Project Showcase at San Francisco State University

**Spring 2010**

**Spring 2009**

**Spring 2009**

**Spring 2006**

LANGUAGES

Spanish - Fluent in speaking, reading, and writing