Fredy Muñoz

+502 5603 5229
fredy@munoz.im
http://fredy.munoz.im

Education

2003 Universidad del Valle de Guatemala
Licenciatura en Ingeniería en Ciencias de la Computación - *Cum Laude* -
Computer Science Degree

Work experience

[2014 - 2016] Information Systems Consultant at GHPI[1]
Responsible for the design, development and evaluation of information systems. Served as data manager and data analyst responsible for collecting data from existing systems and produce information to feed the performance indicators of the Monitoring & Evaluation System.

[2015 - 2016] Researcher at Instituto de Ciencia y Tecnología para el Desarrollo, Universidad Rafael Landívar[2]
Responsible for the application of computing methods to automatically acquire, organize and transform data from electronic sources. Managed the virtualization[3] infrastructure to provide standardize computing environments for the execution of programs to acquire, store and process data.

[2014] Lead Software Engineer at Interactúa Móvil[4]
Responsible for the software development process (designing and implementing new features, bug fixing, deployment, monitoring, database management and codebase management) for the Contacto SMS product, a tool to facilitate the communication between companies and customers via SMS messages. Collaborated with the product owner to translate requirements and needs into programming tasks. Coordinated the programming tasks with the development team. Participated in the implementation of the Scrum[5] methodology for Agile software development[6]. Assisted customers with the integration of their Information Systems into Contacto SMS via a REST API.

[2010 - 2014] Data Management Team Leader at Center for Health Studies[7], Universidad del Valle de Guatemala[8]
Responsible for running, maintaining and improving the Information System created to serve the studies conducted by CDC's International Emerging Infections Program (IEIP)[9] in Central America. Collaborated with epidemiologist, biochemists, physicians and other investigators to design and adjust data collection instruments. Designed an implemented software tools to store, clean, transform, package and distribute data ready for analysis. Oversaw the implementation and maintenance of a Laboratory Information Management System (LIMS)[10]. Oversaw the maintenance and improvement of a system to automate the production and distribution of reports. Led the effort to use aerial photographs of a study site to provide a sample frame and to produce maps used in logistics tasks by using GIS software tools. Led the automation of paper forms and documents digitalization and management. Coordinated a team of six data managers and programers. Assisted a team of investigators from CDC with mobile data collection for a study on soil transmitted helminths prevalence in Kenya.

[2009 - 2010] Professor at Universidad del Valle de Guatemala
Chair of Computer Networks.

[2007 - 2010] Lead Software Engineer at Center for Health Studies, Universidad del Valle de Guatemala
Responsible for designing, building, deploying and maintaining a software tool to perform questionnaire based data collection using electronic pocket-sized mobile devices (PDAs). This tool was initially called Questionnaire Mobile but was later renamed to Questionnaire Manager (QM)[11]. Collaborated with the lead data manager to improve the data collection tool and to fix data related issues. Trained field staff in the usage of electronic devices for data collection. Provided support to field staff with technical difficulties. Assisted IEIP data management team at Cairo, Egypt in the adoption of QM.

[2003 - 2007] Software Engineer at SEGA Outsourcing Services[12]

Responsible for designing, building and delivering software solutions to customers on their own premises, if required. Collaborated with project managers to document and understand customer requirements and to produce project plans to fulfill those requirements. Collaborated with peer engineers in the implementation of software projects. Designed and built a web-based Content Management System named SEGA Portal Builder (SPB) still in use by some companies[13]. Became an specialist in managing virtualized computing environments[14].

[2001 - 2003] Software Developer at Strategic Analysis de Centroamérica[15]

Responsible for designing, building and delivering software for embedded systems[16], electronic mobile device (POS terminals, PDAs running PalmOS and Windows Mobile) and smart cards[17] applications.

Publications

Jarquin, Claudia, Benjamin F. Arnold, **Fredy Muñoz**, Beatriz Lopez, Victoria M. Cuéllar, Andrew Thornton, Jaymin Patel, Lisette Reyes, Sharon L. Roy, Joe P. Bryan, John P. McCracken, John M. Colford Jr. "Population Density, Poor Sanitation, and Enteric Infections in Nueva Santa Rosa, Guatemala" The American Journal of Tropical Medicine and Hygiene (2016): 15-0555.

Jarquin, Claudia, Danilo Alvarez, Oneida Morales, Ana Judith Morales, Beatriz López, Pilar Donado, Maria F. Valencia, Alejandra Arévalo, **Fredy Muñoz**, Isabel Walls, Michael P. Doyle, Walid Q. Alali. "Salmonella on Raw Poultry in Retail Markets in Guatemala: Levels, Antibiotic Susceptibility, and Serovar Distribution." Journal of Food Protection® 78.9 (2015): 1642-1650.

McCracken, John P., Mila M Prill, Wences Arvelo, Kim A Lindblade, Maria R López, Alejandra Estevez, Maria L Müller, **Fredy Muñoz**, Christopher Bernart, Margarita Cortez, Juan C Moir, Jose Ortíz, Antonio Paredes, Marika K Iwane. "Respiratory Syncytial Virus Infection in Guatemala, 2007–2012." Journal of Infectious Diseases 208, no. suppl 3 (2013): S197-S206.

Presentations

Kristen M. Little, Patricia Juliao, Beatriz Lopez, Gordana Derado, Victoria Cuéllar, Andy Thornton, Jaymin C. Patel, **Fredy Muñoz**, Gerard Lopez, Wences Arvelo, Lissette Reyes, Kim Lindblade, Sharon Roy. "Comparison of the Fecal Parasite Concentrator method to Kato-Katz for the Diagnosis of Soil Transmitted Helminths." ASTMH [Conference] Atlanta. 2012.

Kristen M. Little, Beatriz Lopez, Patricia Juliao, **Fredy Muñoz**, Gordana Derado, Victoria Cuéllar, Andy Thornton, Jaymin C. Patel, Gerard Lopez, Lissette Reyes, Kim Lindblade, Sharon Roy. "Health-Seeking Behaviors and Treatment for Soil Transmitted Helminth Infection in Nueva Santa Rosa, Guatemala – 2010." ASTMH [Conference] Atlanta. 2012.

Kristen M. Little, Beatriz Lopez, Patricia Juliao, **Fredy Muñoz**, John McCracken, Gordana Derado, Victoria Cuéllar, Andy Thornton, Jaymin C. Patel, Gerard Lopez, Lissette Reyes, Kim Lindblade, Sharon Roy. "Comparison of Health Facility and Community-Based Estimates of Soil Transmitted Helminth Infection in Nueva Santa Rosa, Guatemala – 2010." ASTMH [Conference] Atlanta. 2012.

Fredy Muñoz "Batch Processing Data Files." Summer Cookstove Research Institute [Seminar] Antigua Guatemala. 2011.

Fredy Muñoz, Kimberly A. Lindblade., Wences Arvelo, Gerard Lopez. "Facilitating programming of questionnaires for personal digital assistants by non-programmers." ASTMH [Conference] New Orleans. 2008.

Gerard Lopez, **Fredy Muñoz**. "Questionnaire Mobile: A new approach to rapidly programming PDAs for data collection." 2nd International Conference on Global Health Applications of Handheld Computing Devices [Conference]. Atlanta. 2008.

Completed courses and additional training

The Data Scientist's Toolbox
Coursera / Johns Hopkins University
Overview of the data, questions, and tools that data analysts and data scientists work with.

R Programming
Coursera / Johns Hopkins University
Programming in R, reading data into R, accessing R packages, writing R functions, debugging, profiling R code, and organizing and commenting R code.

Getting and Cleaning Data
Coursera / Johns Hopkins University
Obtaining data from the web, from APIs, from databases and from colleagues in various formats. Basics of data cleaning and how to make data "tidy". Components of a complete data set including raw data, processing instructions, codebooks, and processed data as well as the basics needed for collecting, cleaning, and sharing data.

Awards & distinctions

1999, 2000, 2001 & 2002 Distinguished Student
Awarded by Universidad del Valle de Guatemala

2002 First Place in Programming Contest
Awarded by Asociación de Informáticos de Guatemala (ADIG)

Toolset

Data Management and Analysis
R + RStudio
Python + NumPy + pandas
MySQL
PostgeSQL
Microsoft SQL Server

Software Development
Ruby + Ruby on Rails
Python + Django
JavaScript + HTML + CSS
Microsoft Visual Studio (.NET)
Java

Reports and documents
Markdown
LaTeX

Operating Systems
Linux
MacOS X
Microsoft Windows
Android

[1] http://globalhealthpartnershipinitiative.org/fredy-munoz/

[2] http://incytde.org

[3] https://en.wikipedia.org/wiki/Virtualization

[4] http://interactuamovil.com

[5] https://www.scrumalliance.org

[6] http://en.wikipedia.org/wiki/Agile_software_development

[7] http://www.acervosalud.net

[8] http://www.uvg.edu.gt

[9] http://www.cdc.gov/news/2009/04/ieip

[10] http://en.wikipedia.org/wiki/Laboratory_information_management_system

[11] https://github.com/QMDevTeam

[12] http://www.gruposega.net/

[13] http://www.coffeenetwork.com

[14] http://en.wikipedia.org/wiki/Virtual_machine

[15] http://www.sadca.com

[16] http://en.wikipedia.org/wiki/Embedded_system

[17] http://en.wikipedia.org/wiki/Smart_card