

# Fredy Muñoz

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## Education

### 2003 Universidad del Valle de Guatemala

Guatemala City

Licenciatura en Ingeniería en Ciencias de la Computación - *Cum Laude* -  
*Computer Science Degree*

## Work experience

### 2014 Lead Software Engineer at Interactúa Móvil<sup>1</sup>

Guatemala City

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<sup>2</sup> methodology for Agile software development<sup>3</sup>. 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<sup>4</sup>, Universidad del Valle de Guatemala<sup>5</sup>

Guatemala City

Responsible for running, maintaining and improving the Information System created to serve the studies conducted by CDC's International Emerging Infections Program (IEIP)<sup>6</sup> in Central America. Collaborated with epidemiologist, biochemists, physicians and other investigators to design and adjust data collection instruments. Designed and 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)<sup>7</sup>. 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 programmers. 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

Guatemala City

Chair of Computer Networks.

### 2007 - 2010 Lead Software Engineer at Center for Health Studies, Universidad del Valle de Guatemala

Guatemala City

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)<sup>8</sup>. 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<sup>9</sup>

Guatemala City

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<sup>10</sup>. Became an specialist in managing virtualized computing environments<sup>11</sup>.

### 2001 - 2003 Software Developer at Strategic Analysis de Centroamérica<sup>12</sup>

Guatemala City

Responsible for designing, building and delivering software for embedded systems<sup>13</sup>, electronic mobile device (POS terminals, PDAs running PalmOS and Windows Mobile) and smart cards<sup>14</sup> applications.

## Publications

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.

Jarquín, 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.

## 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.

## Awards & distinctions

<b>1999, 2000, 2001 &amp; 2002 Distinguished Student</b> Awarded by Universidad del Valle de Guatemala	<b>Guatemala City</b>
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<b>2002 First Place in Programming Contest</b> Awarded by Asociación de Informáticos de Guatemala (ADIG)	<b>Guatemala City</b>
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## Skills & Tools

### Data Management

Microsoft SQL Server  
MySQL  
R + RStudio

### Software Development

Microsoft Visual Studio (Visual Basic, C#)  
Python / Django  
Java  
JavaScript / HTML / CSS

### Reporting & documentation

Markdown  
LaTeX

### Operating Systems

Linux	MacOS X
Microsoft Windows	Android

- <sup>1</sup> <http://interactuamovil.com>
- <sup>2</sup> <https://www.scrumalliance.org>
- <sup>3</sup> [http://en.wikipedia.org/wiki/Agile\\_software\\_development](http://en.wikipedia.org/wiki/Agile_software_development)
- <sup>4</sup> <http://www.acervosalud.net>
- <sup>5</sup> <http://www.uvg.edu.gt>
- <sup>6</sup> <http://www.cdc.gov/news/2009/04/ieip>
- <sup>7</sup> [http://en.wikipedia.org/wiki/Laboratory\\_information\\_management\\_system](http://en.wikipedia.org/wiki/Laboratory_information_management_system)
- <sup>8</sup> <https://github.com/QMDevTeam>
- <sup>9</sup> <http://www.gruposega.net/>
- <sup>10</sup> <http://www.coffeenetwork.com>
- <sup>11</sup> [http://en.wikipedia.org/wiki/Virtual\\_machine](http://en.wikipedia.org/wiki/Virtual_machine)
- <sup>12</sup> <http://www.sadca.com>
- <sup>13</sup> [http://en.wikipedia.org/wiki/Embedded\\_system](http://en.wikipedia.org/wiki/Embedded_system)
- <sup>14</sup> [http://en.wikipedia.org/wiki/Smart\\_card](http://en.wikipedia.org/wiki/Smart_card)