Curriculum Vitae

Información Personal

Apellidos / Nombres	**Rojas, José Miguel**
Nacionalidades	Boliviano, Británico
Correo Electrónico	j.rojas@sheffield.ac.uk
Sitio Web	https://jmrojas.github.io/
Perfil Google Scholar	https://scholar.google.co.uk/citations?user=NeuqUtcAAAAJ
Perfil DBLP	https://dblp.org/pid/94/5122

Formación

Fechas	01/2018 – 08/2019
Institución	Advance HE, Reino Unido
Título	*HEA Fellow*
Fechas	10/2009 – 12/2013
Institución	Universidad Politécnica de Madrid, España
Titulación	*Doctorado «Internacional» «Cum Laude» en Software y Sistemas*
Título de Tesis	Generación Automática de Casos de Prueba en Programación Orientada a Objetos
Fechas	02/2008 – 09/2009
Institución	Universidad Autónoma de Madrid, España
Estudios	*Cursos de Postgrado en Ingeniería Informática y de Telecomunicaciones*
Fechas	04/2005 – 12/2005
Institución	Universidad Autónoma Gabriel René Moreno, Bolivia
Titulación	*Diplomado en Educación Superior*
Fechas	04/2005 – 12/2005
Institución	Universidad Autónoma Gabriel René Moreno, Bolivia
Titulación	*Diplomado en Liderazgo Regional*
Fechas	02/2001 – 12/2005
Institución	Universidad Autónoma Gabriel René Moreno, Bolivia
Titulación	*Licenciado en Ingeniería Informática*

Experiencia Laboral

Fechas	04/2022 – (cargo permanente)
Ocupación o Posición	Profesor Asociado (Lecturer)
Departamento e Institución	Department of Computer Science, The University of Sheffield, Reino Unido
Sector	Educación Superior
Fechas	12/2017 – 03/2022
Ocupación o Posición	Profesor Asociado (Lecturer)
Departamento e Institución	School of Informatics, University of Leicester, Reino Unido
Sector	Educación Superior
Fechas	02/2014 – 12/2017

Ocupación o Posición	Investigador Postdoctoral (Postdoctoral Research Associate in Software Testing)
Departamento e Institución	Department of Computer Science, University of Sheffield, Reino Unido
Sector	Educación Superior
Fechas	10/2009 – 12/2013
Ocupación o Posición	Investigador Predoctoral, Beca concedida mediante competencia de méritos por el Ministerio de Ciencia e Innovación de España bajo el Programa Nacional de Formación de Recursos Humanos
Departamento e Institución	Departamento de Lenguajes, Sistemas e Ingeniería de Software, Universidad Politécnica de Madrid, España
Sector	Educación Superior
Fechas	12/2007 – 08/2009
Ocupación o Posición	Becario de Postgrado en Tecnologías de la Información
Departamento e Institución	Departamento de Tecnologías de la Información, Universidad Autónoma de Madrid, España
Sector	Educación Superior
Fechas	06/2006 – 09/2007
Ocupación o Posición	Desarrollador .NET
Institución	ABJ Consulting, Santa Cruz, Bolivia
Sector	Tecnologías de la Información
Fechas	02/2006 – 12/2006
Ocupación o Posición	Auxiliar de Laboratorio de Matemáticas
Institución	Universidad Autónoma Gabriel René Moreno, Bolivia
Sector	Educación Superior
Fechas	02/2004 – 12/2005
Ocupación o Posición	Auxiliar de Docencia (Introducción a la Informática, Compiladores)
Institución	Universidad Autónoma Gabriel René Moreno, Bolivia
Sector	Educación Superior
Fechas	02/2004 – 07/2004
Ocupación o Posición	Auxiliar de Docencia (Programación I, Estructuras de Datos)
Institución	Universidad de Aquino, Bolivia
Sector	Educación Superior

Publicaciones Científicas

2025

Ruizhen Gu, José Miguel Rojas, and Donghwan Shin.
Can test generation and program repair inform automated assessment of programming projects?
In *18th IEEE International Conference on Software Testing, Verification and Validation (ICST) 2025*. IEEE, 2025.
In Press.

2024

Neil Walkinshaw, Michael Foster, José Miguel Rojas, and Robert M. Hierons.
Bounding random test set size with computational learning theory.
Proc. ACM Softw. Eng., 1(FSE):2538–2560, 2024.

Muhammad Firhard Roslan, José Miguel Rojas, and Phil McMinn.
Private-keep out? understanding how developers account for code visibility in unit testing.
In *2024 IEEE International Conference on Software Maintenance and Evolution (ICSME)*, pages 312–324, 2024.

Muhammad Firhard Roslan, José Miguel Rojas, and Phil McMinn.
Viscount: A direct method call coverage tool for java.
In *2024 IEEE International Conference on Software Maintenance and Evolution (ICSME)*, pages 908–912, 2024.

Yining Qiao and José Miguel Rojas.
What's in a display name? an empirical study on the use of display names in open-source junit tests.
In *Proceedings of the Third ACM/IEEE International Workshop on NL-Based Software Engineering*, NLBSE '24, page 17–24. ACM, 2024.

2023

Ruizhen Gu and José Miguel Rojas.
An empirical study on the adoption of scripted GUI testing for android apps.
In *38th IEEE/ACM International Conference on Automated Software Engineering, ASE 2023 - Workshops*, pages 179–182. IEEE, 2023.

2022

Iván Arcuschin Moreno, Juan Pablo Galeotti, Christian Ciccaroni, and José Miguel Rojas.
On the feasibility and challenges of synthesizing executable Espresso tests.
In *IEEE/ACM International Conference on Automation of Software Test, AST@ICSE 2022*, pages 92–102. ACM/IEEE, 2022.

Muhammad Firhard Roslan, José Miguel Rojas, and Phil McMinn.
An empirical comparison of evosuite and dspot for improving developer-written test suites with respect to mutation score.
In *Search-Based Software Engineering - 14th International Symposium, SSBSE 2022*, volume 13711 of *LNCS*, pages 19–34. Springer, 2022.

2020

Gordon Fraser, Alessio Gambi, and José Miguel Rojas.
Teaching software testing with the code defenders testing game: Experiences and improvements.
In *13th IEEE International Conference on Software Testing, Verification and Validation Workshops, ICSTW 2020, Porto, Portugal, October 24-28, 2020*, pages 461–464. IEEE, 2020.

2019

Gordon Fraser, Alessio Gambi, Marvin Kreis, and José Miguel Rojas.
Gamifying a Software Testing Course with Code Defenders.
In *ACM Technical Symposium on Computer Science Education, (SIGCSE)*, pages 571–577. ACM, 2019.

Gordon Fraser and José Miguel Rojas.
Software testing.
In Sungdeok Cha, Richard N. Taylor, and Kyo C. Kang, editors, *Handbook of Software Engineering*, pages 123–192. Springer International Publishing, 2019.

2018

Sina Shamshiri, José Miguel Rojas, Luca Gazzola, Gordon Fraser, Phil McMinn, Leonardo Mariani, and Andrea Arcuri.
Random or Evolutionary Search for Object-Oriented Test Suite Generation?
Software Testing, Verification and Reliability (STVR), 28(4):e1660, 2018.

Gordon Fraser, Alessio Gambi, and José Miguel Rojas.
A preliminary report on gamifying a software testing course with the Code Defenders testing game.
In *European Conference of Software Engineering Education (ECSEE)*, pages 50–54. ACM, 2018.

Yan Ge Marcelo Medeiros Eler, José Miguel Rojas and Gordon Fraser.
Automated accessibility testing of mobile apps.
In *IEEE Int. Conference on Software Testing, Verification and Validation (ICST)*, pages 116–126. IEEE, 2018.
Facebook Testing and Verification Research Award 2018.

Sina Shamshiri, José Miguel Rojas, Juan Pablo Galeotti, Neil Walkinshaw, and Gordon Fraser.
How do automatically generated unit tests influence software maintenance?
In *IEEE Int. Conference on Software Testing, Verification and Validation (ICST)*, pages 250–261. IEEE, 2018.

2017

Ermira Daka, José Miguel Rojas, and Gordon Fraser.
Generating unit tests with descriptive names or: Would you name your children thing1 and thing2?
In *ACM Int. Symposium on Software Testing and Analysis (ISSTA)*, pages 57–67. ACM, 2017.

José Miguel Rojas, Thomas White, Benjamin Clegg, and Gordon Fraser.
Code Defenders: Crowdsourcing effective tests and subtle mutants with a mutation testing game.
In *Int. Conference on Software Engineering (ICSE)*, pages 677–688, 2017.
ACM Distinguished Paper Award.

Benjamin Clegg, José Miguel Rojas, and Gordon Fraser.
Teaching software testing concepts using a mutation testing game.
In *Int. Conference on Software Engineering (ICSE)(SEET)*, pages 33–36, 2017.

José Miguel Rojas and Gordon Fraser.
Is search-based test generation research stuck in a local optimum?
In *Int. Workshop on Search-Based Software Testing (SBST)*, pages 51–52, 2017.

Gordon Fraser, José Miguel Rojas, Jose Campos, and Andrea Arcuri.
EvoSuite at the SBST 2017 Tool Competition.
In *Int. Workshop on Search-Based Software Testing (SBST)*, pages 39–42, 2017.

2016

José Miguel Rojas, Gordon Fraser, and Andrea Arcuri.
Seeding strategies in search-based unit test generation.
Software Testing, Verification and Reliability (STVR), 26(5):366–401, 2016.

José Miguel Rojas, Mattia Vivanti, Andrea Arcuri, and Gordon Fraser.
A detailed investigation of the effectiveness of whole test suite generation.
Empirical Software Engineering (EMSE), pages 1–42, 2016.

José Miguel Rojas and Gordon Fraser.
Teaching mutation testing using gamification.
In *European Conference of Software Engineering Education (ECSEE)*. Shaker Verlag, 2016.

José Miguel Rojas and Gordon Fraser.
Code Defenders: A mutation testing game.
In *Int. Conference on Software Testing, Verification and Validation Workshops (MUTATION ICSTW)*, pages 162–167. IEEE, 2016.

2015

Sina Shamshiri, René Just, José Miguel Rojas, Gordon Fraser, Phil McMinn, and Andrea Arcuri.
Do automatically generated unit tests find real faults? an empirical study of effectiveness and challenges.
In *IEEE/ACM Int. Conference on Automated Software Engineering (ASE)*, pages 201–211. ACM, 2015.
ACM SIGSOFT Distinguished Paper Award.

Sina Shamshiri, José Miguel Rojas, Gordon Fraser, and Phil McMinn.
Random or genetic algorithm search for object-oriented test suite generation?
In *Genetic and Evolutionary Computation Conference (GECCO)*, pages 1367–1374. ACM, 2015.
Best Paper Award (SBSE-SS Track).

José Miguel Rojas, Gordon Fraser, and Andrea Arcuri.
Automated unit test generation during software development: a controlled experiment and think-aloud observations.
In *ACM Int. Symposium on Software Testing and Analysis (ISSTA)*, pages 338–349. ACM, 2015.

José Miguel Rojas, José Campos, Mattia Vivanti, Gordon Fraser, and Andrea Arcuri.
Combining multiple coverage criteria in search-based unit test generation.
In *Int. Symposium on Search Based Software Engineering (SSBSE)*, volume 9275 of *LNCS*, pages 93–108. Springer, 2015.
Best Paper Award (Industry-relevant SBSE results).

2014

Elvira Albert, Puri Arenas, Miguel Gómez-Zamalloa, and José Miguel Rojas.
Test Case Generation by Symbolic Execution: Basic Concepts, a CLP-Based Instance, and Actor-Based Concurrency.
In *14th Int. School on Formal Methods for the Design of Computer, Communication, and Software Systems (SFM Advanced Lectures)*, volume 8483, pages 263–309. Springer International Publishing, 2014.

2013

Elvira Albert, María García de la Banda, Miguel Gómez-Zamalloa, José Miguel Rojas, and Peter Stuckey.
A CLP Heap Solver for Test Case Generation.
Theory and Practice of Logic Programming (TPLP) (ICLP 2013 SI.), 13(4-5):721–735, 2013.

José Miguel Rojas and Corina S. Păsăreanu.
Compositional Symbolic Execution through Program Specialization.
In *BYTECODE 2013*, 2013.
Peer-reviewed workshop (co-located with ETAPS 2013) with no formal proceedings.

2012

Elvira Albert, Diego Esteban Alonso-Blas, Puri Arenas, Jesús Correas, Antonio Flores-Montoya, Samir Genaim, Miguel Gómez-Zamalloa, Abu Naser Masud, German Puebla, José Miguel Rojas, Guillermo Román-Díez, and Damiano Zanardini.
Automatic inference of bounds on resource consumption.
In *Int. Symposium on Formal Methods for Components and Objects (FMCO, Revised Lectures)*, volume 7866 of *LNCS*, pages 119–144. Springer, 2012.

José Miguel Rojas and Miguel Gómez-Zamalloa.
A Framework for Guided Test Case Generation in Constraint Logic Programming.
In *Int. Symposium on Logic-Based Program Synthesis and Transformation (LOPSTR)*, volume 7844 of *LNCS*, pages 176–193. Springer, 2013.

Elvira Albert, Bjarte M. Østvold, and José Miguel Rojas.
JMS2ABS: Automated extraction of abstract behavioural models from jms applications.
In *Formal Methods for Industrial Critical Systems (FMICS)*, volume 7437 of *LNCS*, pages 16–31. Springer, 2012.

2011

Elvira Albert, Miguel Gómez-Zamalloa, and José Miguel Rojas.
Resource-driven clp-based test case generation.
In *Int. Symposium on Logic-Based Program Synthesis and Transformation (LOPSTR)*, volume 7225 of *LNCS*, pages 25–41. Springer, 2012.

Carmen Navarrete, Marina de la Cruz, Eloy Anguiano, Alfonso Ortega, and José Miguel Rojas.
Parallel simulation of NEPs on clusters.
In *IEEE/WIC/ACM Int. Conferences on Web Intelligence and Intelligent Agent Technology (WI-IAT)*, pages 171–174. IEEE Computer Society, 2011.

2010

Elvira Albert, Miguel Gómez-Zamalloa, José Miguel Rojas, and Germán Puebla.
Compositional clp-based test data generation for imperative languages.
In *Int. Symposium on Logic-Based Program Synthesis and Transformation (LOPSTR)*, volume 6564 of *LNCS*, pages 99–116. Springer, 2011.

José Miguel Rojas, Marina de la Cruz Echeandía, and Alfonso Ortega de la Puente.
Towards the automatic programming of h systems: jhsys, a java h system simulator.
In *Int. Conference on Practical Applications of Agents and Multiagent Systems (PAAMS)*, pages 387–394. Springer, 2010.

2009

Emilio del Rosal, José Miguel Rojas, Rafael Núñez, Carlos Castañeda, and Alfonso Ortega de la Puente.
On the solutions of np-complete problems by means of jnep run on computers.
In *International Conference on Agents and Artificial Intelligence (ICAART)*, pages 605–612. INSTICC Press, 2009.

Visitas de Investigación

Institución	**NASA Ames Research Center**, Moffett Field, California, Estados Unidos
Investigador Responsable	Prof. Corina Păsăreanu
Duración y Fechas	4 meses, 09/2012 – 12/2012

Institución	**KTH Royal Institute of Technology**, Estocolmo, Suecia
Investigador Responsable	Prof. Mads Dam
Duración y Fechas	3 meses, 05/2011 – 07/2011

Proyectos de Investigación

Título del Proyecto	GReaTest: *Growing Readable Software Tests*
Organismo Financiador	Engineering and Physical Sciences Research Council (EPSRC) (EP/N023978/1)
Organismos Participantes	University of Sheffield, Barclays Bank Plc, Google, Microsoft
Duración	03/2016 – 02/2020
Investigador Principal	Dr. Gordon Fraser

Título del Proyecto	EXOGEN: *Explorative Test Oracle Generation*
Organismo Financiador	Engineering and Physical Sciences Research Council (EPSRC) (EP/K030353/1)
Organismos Participantes	Google, Microsoft, University of Sheffield, Reino Unido
Duración	02/2014 – 08/2015
Investigador Principal	Dr. Gordon Fraser

Título del Proyecto	Analysis of biological models in Symbolic PathFinder
Organismo Financiador	Google, Google Summer of Code 2013
Organismos Participantes	NASA Ames Research Center
Fechas	06/2013–09/2013
Investigador Principal	Prof. Corina Păsăreanu

Título del Proyecto	PROMETIDOS-CM: *PROgrama de METodos rIgurosos de DesarrollO de Software*
Organismo Financiador	Comunidad de Madrid (CAM S2009TIC-1465)
Organismos Participantes	IMDEA Software, UPM, UCM
Duración	01/2010 – 12/2013
Investigador Principal	Prof. Francisco Bueno

Título del Proyecto	DOVES: *Desarrollo de Software Verificable y Eficiente*
Organismo Financiador	Ministerio de Ciencia e Innovación de España (TIN 2008-05624)
Organismos Participantes	UPM

Duración	01/2009 – 12/2013
Investigador Principal	Prof. Manuel Hermenegildo
Título del Proyecto	HATS: *Highly Adaptable and Trustworthy Software using Formal Models*
Organismo Financiador	Comisión Europea ICT GA#231620
Organismos Participantes	CTH (Suecia), UIO (Noruega), KTH (Suecia), UPM (España), UKL (Alemania), BOL (Italia), CWI (Holanda), NRS (Noruega), FRH (Alemania), FRG (Holanda), KUL (Bélgica)
Duración	03/2009 – 02/2013
Investigador Principal	Prof. Germán Puebla

Otras Actividades de Investigación

Escuela de Verano	TAROT Summer School, 10th International Summer School on Training And Research On Testing
Organizador	Facultade de Ingenharia, Universidade do Porto, Portugal
Ubicación	Oporto, Portugal
Fechas	29/06/2014–04/07/2014
Escuela de Verano	LASER, 8th International Summer School on Software Engineering: Tools for Practical Software Verification
Organizador	ETH Chair of Software Engineering, Suiza
Ubicación	Isla de Elba, Italia
Fechas	04–10/09/2011
Escuela de Verano	1st PROMETIDOS-CM Summer School
Organizador	Universidad Complutense of Madrid, España
Ubicación	Madrid, España
Fechas	19–21/09/2011

Idiomas

Lengua materna: **Español**

Otros Idiomas

Auto evaluación

	Comprender		**Hablar**		**Escribir**
Nivel europeo(*)	Comprensión auditiva	Comprensión de lectura	Interacción oral	Expresión oral	
Inglés	C2 Usuario competente	C2 Usuario competente	C2 Usuario competente	C2 Usuario competente	C2 Usuario competente
Alemán	A1 Usuario básico	A1 Usuario básico	A1 Usuario básico	A1 Usuario básico	A1 Usuario básico

(*) *Nivel del Marco Europeo Común de Referencia (MECR)*