

JUAN QUIROZ

Research Fellow

Australian Institute of Health Innovation
Macquarie University
juan.quiraz@mq.edu.au

EDUCATION

Ph.D. in Computer Science and Engineering, 2010

University of Nevada, Reno
Thesis title: "Creative Design Using Collaborative Interactive Genetic Algorithms"
Area: Evolutionary Computation, Design Computing

M.S. in Computer Science, 2007

University of Nevada, Reno
Thesis title: "Interactively Evolving User Interfaces"
Area: Evolutionary Computation, Human Computer Interaction, User Interface Design

B.S. in Mathematics and Computer Science, 2005

University of Nevada, Reno

RESEARCH INTERESTS

Applied machine learning, affective computing, evolutionary computation.

EMPLOYMENT

June 2018 – Present

Research Fellow

Australian Institute of Health Innovation
Macquarie University

Feb 2018 – May 2018

Visiting Researcher

Department of Computer Science and Engineering
University of Nevada, Reno

Sep 2017 – Dec 2017

Visiting Researcher

Jan 2017 – Mar 2017

Supervised by Dr. Finale Doshi-Velez
School of Engineering and Applied Sciences
Harvard University

Jan 2017 – Aug 2017

Senior Lecturer

Aug 2014 – Dec 2016

Lecturer

Department of Computer Science and Information Systems
Sunway University (Bandar Sunway, Malaysia)

Jun 2012 - Aug 2014

Computer Scientist – Patent Agent

Independent Contractor (Reno, Nevada, USA)

Jan 2009 - Mar 2012	Intellectual Property Specialist – Patent Agent SilverSky Group LLC (Reno, Nevada, USA)
Jun 2007 - Aug 2007	Summer Scholar Joint Genome Institute Lawrence Livermore National Laboratory (Livermore, California, USA)
Aug 2005 - May 2009	Graduate Research Assistant University of Nevada, Reno Evolutionary Computing Systems Lab

PUBLICATION LIST

Journal Articles

7. **J. C. Quiroz**, M.H. Yong, E. Geangu, "Emotion-Recognition Using Smart Watch Sensor Data: Mixed-Design Study," *JMIR Mental Health*, 2018.
6. **J. C. Quiroz**, N. Mariun, M. A. M. Radzi, and N. Misron, "Fault Detection of Broken Rotor Bar in LS-PMSM Using Random Forests," *Measurement*, 2018.
5. **J. C. Quiroz**, A. Banerjee, S. M. Dascalu, and S. L. Lau, "Feature Selection for Activity Recognition from Smartphone Accelerometer Data," *Intelligent Automation and Soft Computing*, 2017.
4. **J. C. Quiroz** and S. M. Dascalu, "Interactive Shape Perturbation," *International Journal of Computers and Their Applications*, vol. 24, no. 1, 2017.
3. A. Banerjee, **J. C. Quiroz**, and I. Abu-Mahfouz, "Statistical Comparison of Feature Sets for Time Series Classification of Dynamic System Response," *ASCE-ASME Journal of Risk and Uncertainty in Engineering Systems, Part B: Mechanical Engineering*, vol. 2, No. 4, 2016.
2. A. Banerjee, **J. C. Quiroz**, and S. J. Louis, "A Computational Model of Collaborative Creativity: A Meta-Design Approach," *International Journal of Knowledge and Systems Science*, vol. 2, no. 2, 2011.
1. M. Nicolescu, R. Leigh, A. Olenderski, S. Louis, S. Dascalu, C. Miles, **J. Quiroz**, and R. Aleson, "A Training Simulation System with Realistic Autonomous Ship Control," *Computational Intelligence*, vol. 23, no. 4, 2007.

Conference Proceedings

19. **J. C. Quiroz**, M.H. Yong, E. Geangu, "Emotion-Recognition Using Smart Watch Accelerometer Data: Preliminary Findings," **Ubicomp** 2017 Workshop on Mental Health: Sensing and Intervention.
18. S. Tan, F. Doshi-Velez, **J. C. Quiroz**, and E. Glassman, "Clustering LaTeX Solutions to Machine Learning Assignments for Rapid Assessment," *KDD 2017 Workshop on Advancing Education with Data*.
17. **J. C. Quiroz** and S.M. Dascalu, "Design and Implementation of a Procedural Content Generation Web Application for Vertex Shaders," *25th International Conference on Software Engineering and Data Engineering, SEDE*, 2016.

16. A. Banerjee, **J. C. Quiroz**, and I. Abu-Mahfouz, "Statistical Comparison of Feature Sets for Time Series Classification of Dynamical System Response," *ASME 2015 International Mechanical Engineering Congress and Exposition, IMECE*, 2015.
15. A. T. Chan, **J. C. Quiroz**, S. M. Dascalu, and F. C. Harris Jr., "An Overview of Brain Computer Interfaces," *30th International Conference on Computers and their Applications, CATA*, 2015.
14. **J. C. Quiroz**, A. Banerjee, S. J. Louis, and S. M. Dascalu, "Collaborative Evolution of 3D Models," *Sixth International Conference on Design Computing and Cognition, DCC*, 2014. **(29% Acceptance Rate)**
13. **J. C. Quiroz**, A. Banerjee, and S. J. Louis, "3-D Modeling Using Collaborative Evolution," *Extended Abstract in Genetic and Evolutionary Computation Conference, GECCO*, 2012.
12. **J. C. Quiroz**, A. Banerjee, S. J. Louis, and S. M. Dascalu, "Document Design with Interactive Evolution," *2nd International Symposium on Intelligent Interactive Multimedia Systems and Services, KES IIMSS*, 2009.
11. **J. C. Quiroz**, S. J. Louis, A. Banerjee, and S. M. Dascalu, "Towards Creative Design Using Collaborative Interactive Genetic Algorithms," *IEEE Congress on Evolutionary Computation, CEC*, 2009.
10. **J. C. Quiroz**, A. Banerjee, and S. J. Louis, "IGAP: Interactive Genetic Algorithm Peer to Peer," *Extended Abstract in Genetic and Evolutionary Computation Conference, GECCO*, 2008.
9. A. Banerjee, **J. C. Quiroz**, and S. J. Louis, "A Model of Creative Design Using Collaborative Interactive Genetic Algorithms," *Third International Conference on Design Computing and Cognition, DCC*, 2008. **(30% Acceptance Rate)**
8. **J. C. Quiroz**, S. J. Louis, A. Shankar, and S. M. Dascalu, "Interactive Genetic Algorithms for User Interface Design," *IEEE Congress on Evolutionary Computation, CEC*, 2007.
7. **J. Quiroz**, A. Shankar, S. M. Dascalu, and S. J. Louis, "Software Environment for Research on Evolving User Interface Designs," *Second International Conference on Software Engineering Advances, ICSEA*, 2007.
6. Shankar, **J. Quiroz**, S. M. Dascalu, S. J. Louis, and M. N. Nicolescu, "Sycophant: An API for Research in Context-Aware User Interfaces," *Second International Conference on Software Engineering Advances, ICSEA*, 2007.
5. M. J. J. McMahon, S. M. Dascalu, F. C. J. Harris, and **J. Quiroz**, "An Extensible Architecture for Network-Attached Device Management," *Second International Conference on Software Engineering Advances, ICSEA*, 2007.
4. **J. C. Quiroz**, S. J. Louis, and S. M. Dascalu, "Interactive Evolution of XUL User Interfaces," *Genetic and Evolutionary Computation Conference, GECCO*, 2007.
3. **J. C. Quiroz**, S. M. Dascalu, and S. J. Louis, "Human Guided Evolution of XUL User Interfaces," *ACM CHI Extended Abstracts on Human Factors in Computing Systems, CHI*, 2007.
2. C. Miles, **J. Quiroz**, R. Leigh, and S. J. Louis, "Co-Evolving Influence Map Tree Based Strategy Game Players," *IEEE Symposium on Computational Intelligence and Games, CIG*, 2007.
1. F. C. Harris Jr, M. Penick, G. Kelly, **J. C. Quiroz**, S. M. Dascalu, and B. T. Westphal, "V-FIRE: Virtual Fire in Realistic Environments," *Software Engineering Research and Practice, SERP*, 2005.

Technical and Legal Reports

3. C. A. Fisher, T. D. Casey, and **J. C. Quiroz**, "What Innovators Need to Know – and Need to Do – Under the America Invents Act," American Innovators for Patent Reform, January 2012.
 2. **J. C. Quiroz**, "Creative Design Using Collaborative Interactive Genetic Algorithms," Ph.D. Thesis, Computer Science and Engineering, University of Nevada, Reno, May 2010.
 1. **J. C. Quiroz**, "Interactively Evolving User Interfaces," Masters Thesis, Computer Science, University of Nevada, Reno, May 2007.
-

INVITED TALKS AND PRESENTATIONS

Invited

2. "Intellectual Property" at the Department of Computer Science and Engineering, University of Nevada, Reno, USA, October 2012.
1. "Creative Design Using Collaborative Interactive Genetic Algorithms" and "Intellectual Property" at the Department of Computer Science, Kean University, Union, New Jersey, USA, March 2011.

Conference Presentations

11. "Design and Implementation of a Procedural Content Generation Web Application for Vertex Shaders," at the *25th International Conference on Software Engineering and Data Engineering, SEDE*, Denver, USA, September 2016.
10. "Collaborative Evolution of 3D Models" at the *Sixth International Conference on Design Computing and Cognition, DCC14*, London, England, June 2014.
9. "Towards Creative Design Using Collaborative Interactive Genetic Algorithms" at the *IEEE Congress on Evolutionary Computation, CEC*, Trondheim, Norway, May 2009.
8. "Using Coevolution to Understand and Validate Game Balance in Continuous Games" at the *Genetic and Evolutionary Computation Conference, GECCO*, Atlanta, Georgia, USA, July 2008.
7. "A Model of Creative Design Using Collaborative Interactive Genetic Algorithms" at the *Third International Conference on Design Computing and Cognition, DCC*, Atlanta, Georgia, USA, June 2008. **(Best Presentation Award)**
6. "Machine Learning for Identifying Bacterial Promoters" at the Graduate Technical Paper Competition of the 2007 Society of Hispanic Professional Engineers Conference, Philadelphia, Pennsylvania, USA, November 2007.
5. "Software Environment for Research on Evolving User Interface Designs" at the *Second International Conference on Software Engineering Advances, ICSEA*, Cap Esterel, France, August 2007.
4. "Sycophant: An API for Research in Context-Aware User Interfaces" at the *Second International Conference on Software Engineering Advances, ICSEA*, Cap Esterel, France, August 2007.

3. "An Extensible Architecture for Network-Attached Device Management" at the *Second International Conference on Software Engineering Advances, ICSEA*, Cap Esterel, France, August 2007.
2. "Interactive Evolution of XUL User Interfaces" at the Graduate Technical Paper Competition of the 2007 Society of Hispanic Professional Engineers National Technical and Career Conference, Denver, Colorado, USA, January 2007.
1. "V-FIRE: Virtual Fire in Realistic Environments" at the *Software Engineering Research and Practice Conference*, Las Vegas, Nevada, USA, June 2005.

Poster Presentations

4. "Patentability of Design State Spaces" at the *Sixth International Conference on Design Computing and Cognition, DCC 2014*, London, England, June 2014.
 3. "IGAP: Interactive Genetic Algorithm Peer to Peer" at the *Genetic and Evolutionary Computation Conference, GECCO 2008*, Atlanta, Georgia, USA, July 2008.
 2. "Human Guided Evolution of XUL User Interfaces" at the *ACM CHI Human Factors in Computing Systems Conference, CHI 2007*, San Jose, California, USA, May 2007.
 1. "Interactive Evolution of User Interfaces" at the MGE@MSA/WAESO Student Research Conference in Phoenix, Arizona, USA, April 2007.
-

FUNDING

2. 2016-2017 **Lancaster University**, Predicting the Emotion of a User Based on Walking Patterns, Award to **Juan Quiroz** (PI), Kwang In Kim (Co-PI), Yong Min Hooi, and Angela Lee Siew Hoong £15,000.
 1. 2016 **Jeffrey Cheah Travel Grant for Southeast Asia Studies at Harvard** \$4,000 USD.
-

TEACHING

Fall 2014 – Aug 2017: Sunway University Lecturer

- PRG1114 – Programming Concepts and Problem Solving
 - CSC1024 – Programming Principles
 - CSC2044 – Concurrent Programming
 - WEB202 – Web Programming
 - PRG102D – Basic Programming Concepts
 - Internship coordinator
-

AWARDS

- Jeffrey Cheah Travel Grant for Southeast Asia Studies at Harvard University.
- Nomination for Best Student Paper Award at the IEEE Congress on Evolutionary Computation, Trondheim, Norway, May 2009.
- Best Presentation Award at the Third International Conference on Design Computing and Cognition, Atlanta, Georgia, USA, June 2008

SERVICE

Departmental Committees

- BIS Business Analytics Program Committee, Member, Sunway University, May 2016 – August 2017.
- MSc. in Information Systems Program Committee, Member, Sunway University, May 2015 – August 2017.

Associate Editor

- International Journal of Computers and Their Applications, since 2015.

Program Committee

- ISCA 26th International Conference on Software Engineering and Data Engineering (SEDE 2017), San Diego, California, USA, October 2017.
- Fourth International Workshop on Collaboration and Virtual Environments (CoVE-2016), Orlando, Florida, USA, October 2016.
- 22nd International Conference on Virtual Systems & Multimedia (VSMM 2016), Kuala Lumpur, Malaysia, October 2016.
- ISCA 25th International Conference on Software Engineering and Data Engineering (SEDE 2016), Denver, Colorado, USA, September 2016.
- ISCA 24th International Conference on Software Engineering and Data Engineering (SEDE 2015), San Diego, California, USA, October 2015.
- Third International Workshop on Collaboration and Virtual Environments (CoVE-2015), Atlanta, Georgia, USA, June 2015.

Reviewer

- Journal of Medical Internet Research.
- Intelligent Automation and Soft Computing Journal.
- Special Issue of journal Information Systems Frontiers “Disaster Management and Information Systems.”
- Designing Interactive Systems (DIS 2017).
- The 5th International Conference on Soft Computing, Intelligent System and Information Technology (ICSIIT 2017).
- Joint International Conference on Optimization of Electrical and Electronic Equipment (OPTIM 2017).
- International Conference on Information Technology and Multimedia at UNITEN (ICIM μ 2015).