

JUAN RADA-VILELA, PHD

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107/9 Blair Street – Wellington, New Zealand

• Areas of Expertise

Artificial Intelligence: Soft Computing, Swarm Intelligence, Fuzzy Logic, Evolutionary Algorithms, Neural Networks
Software Engineering: Software Design and Development, Object-Oriented Programming, SQL and NoSQL Databases

• Education (13 years)

2010 – 2014 3½ years	Doctor of Philosophy in Computer Science – Artificial Intelligence Thesis: Population Statistics for Particle Swarm Optimization on Problems Subject to Noise (pdf) Victoria University of Wellington – Wellington, New Zealand
2009 – 2010 1 year	Master in Soft Computing and Intelligent Data Analysis Thesis: Multi-Objective Ant Colony Optimization Algorithms for the TSALBP (pdf) Universidad de Oviedo / European Centre for Soft Computing – Mieres, Spain
2006 – 2009 2½ years	Master of Science in Computer Science – Artificial Intelligence Thesis: Evolution of Morphology and Behaviour of Virtual Creatures using PSO and ANNs (pdf) Universidad Centroccidental Lisandro Alvarado – Barquisimeto, Venezuela
2006 – 2007 1 year	Graduate Diploma in Tertiary Teaching Universidad Fermín Toro – Barquisimeto, Venezuela
1999 – 2005 5½ years	Bachelor of Engineering with Honours – Electronic and Computer System Engineering Thesis: Intelligent Robotic Arm to Play Tic-Tac-Toe using Nash Equilibrium (pdf) Universidad Fermín Toro – Cabudare, Venezuela

• Industry Experience (5 years)

2010 – ... 5 years	Software Architect, Engineer and Founder at FuzzyLite Limited – Wellington, New Zealand Created a popular fuzzy logic control library and application in C++, Java, and Qt
2016 – 2017 1½ years	Senior Software Engineer at EDMI Limited – Wellington, New Zealand Worked on multiple projects handling data from smart electricity meters
2014 – 2015 1 year	Software Engineer at VizExplorer – Wellington, New Zealand Worked on data mining and data visualisation for large genomic and casino datasets
2012 3 months	LaTeX Developer at Affinity Limited – Wellington, New Zealand Developed a LaTeX template to automatically format ebooks for international publisher PressBooks
2006 – 2008 2 years	Java Developer at Representaciones Tecnológicas de Cartago – Tres Ríos, Costa Rica Developed an application for SMEs to estimate the cost of their phone bills based on call detail records
2005 – 2006 1 year	Delphi Developer at Centro de Computación G&T Sistemas – Barquisimeto, Venezuela Developed modules of budget execution and placement of orders for the government administration

• Academic Experience (2 years)

2015 – 2016 6 months	Postdoctoral Researcher in Human Genetics at McGill University – Montreal, Canada Worked on supervised and unsupervised learning for classification of human epigenomic datasets
2011 6 months	Teaching Assistant at Victoria University of Wellington – Wellington, New Zealand Tutored “introduction to computer program design”, and “data structures and algorithms”
2006 – 2007 1 year	Lecturer at Universidad Fermín Toro – Cabudare, Venezuela Lectured “fundamentals of the laboratory of digital systems and micro-controllers”

• Voluntary Experience (3 years)

2014 – ... 3 years	Consultant at FuzzyLite Forums – Wellington, New Zealand Offering advise and support on fuzzy logic control to the community using the FuzzyLite libraries
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• Languages

Spanish (native), **English** (fluent), **French** (advanced), **Italian** (intermediate)

• Software Projects

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- 2017 [QtFuzzyLite 6](#) – A commercial user interface to design and operate fuzzy logic controllers
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- 2017 [fuzzylite 6.0](#) – A free and open-source library to design and operate fuzzy logic controllers in C++ ([statistics](#))
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- 2017 [jfuzzylite 6.0](#) – A free and open-source library to design and operate fuzzy logic controllers in Java ([statistics](#))
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- 2014 [easy-todo](#) – An open-source \LaTeX package for adding notes to documents

• Computer Skills

(skills are sorted by relevance, and superscript numbers indicate years of experience)

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- Operating Systems:** Apple Mac OS X⁹, Ubuntu Linux⁹, Microsoft Windows¹, Microsoft DOS
- Prog. Languages:** C++⁹, Java⁹, C#, R⁸, Python², Assembler
- IDEs:** NetBeans¹⁰, Eclipse⁵, IntelliJ¹, RStudio¹, Xcode
- DBMSs:** SQL⁹, SQLite², PostgreSQL², MS SQL Server¹, Apache Cassandra, MySQL, H2
- Libraries:** Qt⁵, Java EE¹, OpenGL, OpenCV, Bullet Physics
- Scientific:** R⁸, Weka¹, KEEL, gnuplot, Matlab, SPSS
- Documents:** \LaTeX ⁹, Markdown, JSON, XML⁴, XSL² (XSLT, XPath, XSL-FO), Doxygen¹, HTML, DTD
- Miscellaneous:** Version Control⁸ (git, svn), Multithreading⁶ (java, qthreads, pthreads), Grid Computing³ (sge)
- Others:** Maven¹, CMake¹, Docker, Travis, Jenkins, Tomcat, bash, rsync, gdb, valgrind, Java Profiler

• Scholarships

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| 2015 | McGill University and Génome Québec Innovation Centre
Postdoctoral Research in Human Genetics and Artificial Intelligence | Montreal,
Canada |
| 2013 | Royal Society Marsden Scholarship – Doctor of Philosophy in Artificial Intelligence | Wellington, |
| 2010 | Victoria PhD Scholarship – Doctor of Philosophy in Artificial Intelligence | New Zealand |
| 2009 | European Centre for Soft Computing Scholarship
Master in Soft Computing and Intelligent Data Analysis | Mieres,
Spain |
| 2006 | Universidad Fermín Toro – Graduate Diploma in Tertiary Teaching | Cabudare, Venezuela |

• Awards

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| 2017 | Best Innovation Award at EDMI Limited – Wellington, New Zealand
Integration of R in software application workflow to automatically generate R+Markdown reports | . |
| 2014 | Victoria PhD Completion Award at Victoria University of Wellington – Wellington, New Zealand
Award for finishing and submitting PhD thesis within three years and six months | |
| 2011 | Best Presentation Award at NZ Computer Science SRS Conference – Palmerston North, New Zealand
Evolution of Morphology and Behaviour of Virtual Creatures using PSO and ANNs | |
| 2011 | Travel Grant at Genetic and Evolutionary Computation Conference – Dublin, Ireland
A performance study on synchronous and asynchronous updates in particle swarm optimization | (doi) |
| 2005 | 1st Place: Best Undergraduate Thesis in Computer Engineering at IEEE-INELECTRA – Caracas, Venezuela
Intelligent Robotic Arm to Play Tic-Tac-Toe using Nash Equilibrium | (nationwide contest) |
| 2005 | 2nd Place: Technics and Innovation at Eureka – Caracas, Venezuela
Intelligent Robotic Arm to Play Tic-Tac-Toe using Nash Equilibrium | (nationwide contest) |
| 2004 | Best Work and 1st Place: Artificial Intelligence at Universidad Fermín Toro – Cabudare, Venezuela
Multi-layer perceptron for image reconstruction | (VI Conference of Science and Technology) |
| 2003 | 1st Place: Automata and Formal Languages at Universidad Fermín Toro – Cabudare, Venezuela
Nondeterministic finite automaton model of the lottery | (V Conference of Science and Technology) |
| 2003 | 1st Place: Digital Systems at Universidad Fermín Toro – Cabudare, Venezuela
Equaliser with low-pass and high-pass filters for audio signals | (V Conference of Science and Technology) |
| 2002 | 2nd Place: Numerical Analysis at Universidad Fermín Toro – Cabudare, Venezuela
Approximation of structural beam deflection | (III Conference of Mathematical Applications in Engineering) |
| 2001 | 3rd Place in Differential Calculus at Universidad Fermín Toro – Cabudare, Venezuela
Analysis of structural beam deflection | (II Conference of Mathematical Applications in Engineering) |

• Research Metrics		Citations	<i>h</i> -index	<i>i</i> 10-index
Google Scholar Profile		254	10	11
• Journal Articles		(IF: impact factor)		
2017	J. Rada-Vilela. The FuzzyLite Libraries for Fuzzy Logic Control (under review)			
2015 IF: 2.963	J. Rada-Vilela, M. Johnston, M. Zhang. Population statistics for particle swarm optimization: Hybrid methods in noisy optimization problems . Swarm and Evolutionary Computation 22, pp. 15–29			(doi)
2015 IF: 1.630	J. Rada-Vilela, M. Johnston, M. Zhang. Population statistics for particle swarm optimization: Single-evaluation methods in noisy optimization problems . Soft Computing 19 (9), pp. 2691–2716			(doi)
2014 IF: 2.963	J. Rada-Vilela, M. Johnston, M. Zhang. Population statistics for particle swarm optimization: Resampling methods in noisy optimization problems . Swarm and Evolutionary Computation 17, pp. 37–59 (ranked 8th in top 25 hottest articles in Jul-Sep'14)			(doi)
2014 IF: 2.577	J. Rada-Vilela, M. Johnston, M. Zhang. Deception, blindness and disorientation in particle swarm optimization applied to noisy problems . Swarm Intelligence 8 (4), pp. 247–273			(doi)
2013 IF: 2.857	J. Rada-Vilela, M. Chica, Ó. Cordon, S. Damas. A comparative study of multi-objective ant colony optimization algorithms for the time and space assembly balancing problem . Applied Soft Computing Journal 13, pp. 4370–4382 (ranked 8th in top 25 hottest articles in Oct-Dec'13)			(doi)
2011 IF: 1.630	J. Rada-Vilela, M. Zhang, W. Seah. A performance study on synchronicity and neighborhood size in particle swarm optimization . Soft Computing 17 (6), pp. 1019–1030			(doi)
• Conference Papers				
2013	J. Rada-Vilela. fuzzylite: a fuzzy logic control library in C++ . In: Proceedings of the Open Source Developers Conference. Paper available at fuzzylite.com/downloads/			
2013	J. Rada-Vilela, M. Zhang, M. Johnston. Resampling in particle swarm optimization . In: Proceedings of the IEEE Congress on Evolutionary Computation, pp. 947–954			(doi)
2013	J. Rada-Vilela, M. Zhang, M. Johnston. Optimal computing budget allocation in particle swarm optimization . In: Proceedings of the Genetic and Evolutionary Computation Conference, pp. 81–88			(doi)
2012	J. Rada-Vilela, M. Zhang, W. Seah. Evaporation mechanisms for particle swarm optimization . In: Proceedings of the International Conference on Simulated Evolution and Learning, pp. 238–247			(doi)
2012	J. Rada-Vilela, M. Zhang, W. Seah. A performance study on the effects of noise and evaporation in particle swarm optimization . In: Proceedings of the IEEE Congress on Evolutionary Computation, pp. 873–880			(doi)
2011	J. Rada-Vilela, M. Zhang, W. Seah. Random asynchronous PSO . In: Proceedings of the 5th International Conference on Automation, Robotics and Applications, pp. 220–225			(doi)
2011	J. Rada-Vilela, M. Zhang, W. Seah. A performance study on synchronous and asynchronous updates in particle swarm optimization . In: Proceedings of the Genetic and Evolutionary Computation Conference, pp. 21–28			(doi)
2008	J. Rada, R. Parma, W. Pereira. Path optimization for multiple objectives in directed graphs using genetic algorithms . In: Proceedings of the IEEE Congress on Evolutionary Computation, pp. 153–156			(doi)
2007	R. Parma, W. Pereira, J. Rada. Ant colony optimization applied to an autonomous multiagent game . In: Proceedings of the 10th International Conference on Computer Games, pp. 44–49			
• Peer Review				
Journals: IEEE Computational Intelligence Magazine, Swarm and Evolutionary Computation, Neural Computing and Applications, Expert Systems With Applications, Complex & Intelligent Systems, Soft Computing, International Journal of Bio-Inspired Computation				
Committees: IEEE Conference on Fuzzy Systems (2016), IEEE Congress on Evolutionary Computation (2018, 2016), Simulated Evolution And Learning (2017, 2014), Conference on Intelligent Data Engineering and Automated Learning (2017)				

• Presentations

2013	Tutorial on fuzzylite: a fuzzy logic control library in C++ Video available at youtu.be/rSAIWPyaA34	YouTube Channel
2011	Swarm intelligence for swarm robotics (video: youtu.be/nlCdiKmyPaM) Finalist at VUW Tell Us a Story Challenge	Wellington, New Zealand
2011	Swarm intelligence for swarm robotics (video: youtu.be/GNU_DLC55HY) Finalist at VUW Three Minute Competition	Wellington, New Zealand
2011	Swarm intelligence for swarm robotics (4th place award) Present Around the World Competition - IET Wellington Young Professionals	Wellington, New Zealand
2011	Evolution of morphology and behaviour of virtual creatures (best presentation award) 9th New Zealand Computer Science Research Student Conference	Palmerston North, New Zealand

• Workshops

2017	The Joy of Improvisation with the Wellington Improvisation Troupe – Wellington, New Zealand
2016	Teaching and Learning Services Workshops at McGill University – Montreal, Canada (1) Designing and delivering effective lectures, (2) Engaging students using active learning strategies, (3) Leading effective discussions, (4) Public speaking skills, (5) Bumps in the road in graduate supervision: A conflict resolution discussion, (6) Managing Your Supervisor: A Closed Door Discussion
2011	Excell Intercultural Skills Program at Victoria University of Wellington – Wellington, New Zealand Excellence in Cultural Experiential Learning and Leadership

• Certificates

2008	TOEFL: Test of English as a Foreign Language (Score: 105 / 120)
2008	Sun Certified Specialist: NetBeans IDE

• Additional Training

+600h	French Language Courses (advanced level: B2 – C1)
+120h	Italian Language Course (intermediate level: B1)
120h	English Language Course (advanced level)
24h	High Level Languages: Java using NetBeans IDE
24h	Software and System Modeling: Unified Modeling Language
22h	Basic Workplace First Aid and Personal Emergency Skills Course
16h	German Language Course (introductory level)

• Social Media

Github: github.com/jcrada/	DBLP: dblp.uni-trier.de/pers/hd/r/Rada=Vilela:Juan
LinkedIn: linkedin.com/in/jcrada/	Google Scholar: scholar.google.co.nz/citations?user=Ef7smk4AAAAJ

• Hobbies

Arts: Playing piano, Dancing salsa, Learning languages, Creative writing.
Sports: Tramping, Squash, Yoga, Gym. **Science:** Programming.