



**Prof Fernando Buarque, Visiting Professor, IIS, UJ**

**Fernando Buarque de Lima Neto** is Brazilian, married, one lovely daughter and “globetrotter-bookworm-DIY-motorbiker guy” and Fellow of the Academy of Science of Pernambuco-Brazil. A short biosketch follows:

- Over thirty years career in the public and private sectors, which includes head and senior management, teaching and advanced research, several board-level positions (including c-suite), and long list as sizeable international experience, with travels to several dozens of Countries, and invited as key-speaker as well as visiting scholar in venues throughout the world.
- Cosmopolitan doctoral and post-doctoral education that includes PhD at Imperial College London (four years), Alexander von Humboldt Fellowship to visit Germany as Experienced research (University of Muenster, two years), and Senior Visiting Professorship to visit USA (University of Florida, one year). In his early twenties, laureate cadet and Infantry Army Officer and deployment with the technical Corps of Informatics.
- Excellent communication skills (English, Spanish, Portuguese, French and some German and Italian), strategic planning/coordination abilities, and above all a creative-innovative mind.
- Substantial leadership in Science and Technology substantiated by five active international appointments in the Americas (Texas A&M-USA and University of Pernambuco-Brazil), Europe (WWU-Munster-Germany and University of Exeter-England), and Africa (University of Johannesburg-South Africa), on-going collaborations with over 13 universities as well as 30 research students across the globe, 220 publications, and over 50 supervised PG students.
- Vast executive experience, current board member of the State Science Foundation, former president of Brazilian Computational Intelligence Society, Head of Department, and Dean. Substantial expertise with university administration, academic internationalization development, and especially university-industry interaction. Past positions include Associate Vice-Chancellor of Postgraduate of UPE (five year term) and Associate Dean of International Relations of the School of Engineering (five year term).
- Advanced skills on directing international research projects, large-multidisciplinary teams, novel teaching approaches, and cutting-edge artificial intelligence research (Semiotics, Swarm & Evolutionary Computing). Explainable AI, AI as the main engine for decision

support for the Fourth Industrial Revolution, and Responsible (Ethical) use of AI are the latest areas of interests.

### **Important Links and Information**

1) <https://fbln.me/>

2) LinkedIn: <https://www.linkedin.com/in/fernandobuarque/>

3) Bio Sketch: <https://fbln.me/biosketch/>

4) Active affiliations:

Senior Associate Professor – PostGrad/Undergrad Program on Computing Engineering of UPE, Brazil (PPG-EC / E-Comp)

Honorary Professor – College of Engineering, Mathematics & Physical Sciences of U.of Exeter, England (CEMPS)

Visiting Int'l Professor – School of Business and Economics-European Research Center for IS-WWU Münster, Germany (ERCIS)

Visiting Professor – School of Electrical Engineering of University of Johannesburg, South Africa (FEBE@UJ)

Adjunct Professor (external) – Dept Electrical & Computer Engineering of Texas A&M University, USA (ECE@TAMU)

Board Member – Science and Technology State (of Pernambuco) Foundation , Brazil (FACEPE)

Research Ambassador – University of Münster, Germany (WWU)

Research Group Head – Computational Intelligence Research Group of UPE, Brazil (CIRG@UPE)

Steering Committee Chair – Latin American Conference on Computational Intelligence Conference Series (LA-CCI)

5) Book with Prof Marwala => <https://fbln.me/mfaib/>

-Former PhD Students at UJ => PAUL, MARCOS, ILYES

-Publications (with UJ students and colleagues) =>

**BOOK:**

BUARQUE DE LIMA-NETO, FERNANDO ; MARWALA, Tshilidzi ; ROBERTS, Nicky. MY FIRST A.I. BOOK – Artificial Intelligence and Learning (English Edition). Amazon publisher, 2019.

**JOURNALS:**

BOULKAIBET, I. ; MTHEMBU, L. ; BUARQUE DE LIMA NETO, F. ; MARWALA, Tshilidzi. Finite element model updating using fish school search and volitive particle swarm optimization. *Integrated Computer-Aided Engineering*, v. 22, p. 361-376, 2015.

PAUL, SATYAKAMA ; MÜLLER, H ; PREISER, R. ; LIMA NETO, F. B. ; MARWALA, Tshilidzi ; WILDE, Philippe de. Developing a management decision-making model based upon a complexity perspective with reference to the Bee Algorithm. *EMERGENCE (MAHWAH, N.J.)*, v. 16, p. 1-33, 2014.

## CHAPTERS

BOULKABEIT, ILYES ; BUARQUE DE LIMA-NETO, FERNANDO ; MARWALA, Tshilidzi ; TWALA, Bhekisipho. Finite element model updating using swarm intelligence algorithms. In: Ying Tan. (Org.). *Swarm Intelligence - Volume 3: Applications*. 1ed. Peking: Institute of Engineering and Technology (IET), 2018, v. 3, p. 27-.

MBUVHA, Rendani ; BOULKAIBET, Ilyes ; MARWALA, Tshilidzi ; DE LIMA NETO, Fernando Buarque. A Hybrid GA-PSO Adaptive Neuro-Fuzzy Inference System for Short-Term Wind Power Prediction. *Lecture Notes in Computer Science*. 1ed.: Springer International Publishing, 2018, v. , p. 498-506.

## CONFERENCE PAPERS:

ALVARES, MARCOS ; DE LIMA NETO, FERNANDO BUARQUE ; MARWALA, Tshilidzi. Prioritising Security Tests on Large-Scale and Distributed Software Development Projects by Using Self-organised Maps. In: Akira Hirose; Seiichi Ozawa; Kenji Doya; Kazushi Ikeda; Minho Lee; Derong Liu. (Org.). *Lecture Notes in Computer Science*. 1ed.: Springer International Publishing, 2016, v. 8850, p. 60-69.

SATYAKAMA, P. ; JANECEK, A. ; BUARQUE DE LIMA NETO, F. ; MARWALA, Tshilidzi. A New Approach for Suggesting Takeover Targets Based on Computational Intelligence and Information Retrieval Methods: A Case Study from the Indian Software Industry. In: S. Chakraverty. (Org.). *Mathematics of Uncertainty Modeling in the Analysis of Engineering and Science Problems*. 1ed. Hershey: IG Global, 2014, v. 1, p. 290-308.

BARBOSA, MARCOS ALVARES ; DE LIMA NETO, FERNANDO BUARQUE ; MARWALA, Tshilidzi. Tolerance to complexity: Measuring capacity of development teams to handle source code complexity. In: 2016 IEEE International Conference on Systems, Man, and Cybernetics (SMC), 2016, Budapest. 2016 IEEE International Conference on Systems, Man, and Cybernetics (SMC). p. 002954.

ALVARES, MARCOS ; MARWALA, Tshilidzi ; DE LIMA NETO, FERNANDO BUARQUE. Application of computational intelligence for Source Code classification. In: 2014 IEEE Congress on Evolutionary Computation (CEC), 2014, Beijing. 2014 IEEE Congress on Evolutionary Computation (CEC). p. 895.

ALVARES, MARCOS ; MARWALA, Tshilidzi ; DE LIMA NETO, FERNANDO BUARQUE. Applications of computational intelligence for static software checking against memory corruption vulnerabilities. In: 2013 IEEE Symposium on Computational Intelligence in Cyber Security (CICS), 2013, Singapore. 2013 IEEE Symposium on Computational Intelligence in Cyber Security (CICS), 2013. p. 59-66.

SATYAKAMA, P. ; MARWALA, Tshilidzi ; BUARQUE DE LIMA NETO, F. An Assessment Model for Human Performance Measurement - Theoretical Model and Distance based Implementation. In: 8th Annual London Business Research Conference, 2013, London. Proceedings of 8th Annual London Business Research Conference. Victoria-Australia: World Business Institute Pty Ltd, 2013. p. 1-13.

BOULKABEIT, ILYES ; MTHEMBU, LINDA ; MARWALA, Tshilidzi ; NETO, FERNANDO BUARQUE DE LIMA. Finite Element Model Updating Using Fish School Search Optimization Method. In: 2013 BRICS Congress on Computational Intelligence & 11th Brazilian Congress on Computational Intelligence (BRICSOCI & CBIC), 2013, Ipojuca. 2013 BRICS Congress on Computational Intelligence and 11th Brazilian Congress on Computational Intelligence, 2013. p. 447-452.

PAUL, SATYAKAMA ; JANECEK, ANDREAS ; NETO, FERNANDO BUARQUE DE LIMA ; MARWALA, Tshilidzi. Applying the Negative Selection Algorithm for Merger and Acquisition Target Identification Theory and Case Study. In: 2013 BRICS Congress on Computational Intelligence & 11th Brazilian Congress on Computational Intelligence (BRICSOCI & CBIC), 2013, Ipojuca. 2013 BRICS Congress on Computational Intelligence and 11th Brazilian Congress on Computational Intelligence. v. Ap.Ind. p. 609-616.

JUNIOR, MARCOS ALVARES BARBOSA ; DE LIMA NETO, FERNANDO BUARQUE ; MARWALA, Tshilidzi. Optimizing risk management using NSGA-II. In: 2012 IEEE Congress on Evolutionary Computation (CEC), 2012, Brisbane. 2012 IEEE Congress on Evolutionary Computation. p. 1-8.