**ALFREDO RICARDO DE FARIA PASSOS**

Brazilan, 39 years old.

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**PROFISSIONAL OVERVIEW**

Professional with solid experience in the financial and operations research areas, providing financial solutions and implementing decision making support methods for medium and large companies.

Activities developed in the financial area: Accounts Receivable and Payable Management, preparation and monitoring of the corporate budget (especially sales, cash, capital and costs budgets). Budgeted x Realized analysis and financial planning in general.

Another main expertise is the economic evaluation of investment projects under different scenarios, as well as cash flow estimation (from companies’ financial statements) and forecasting of financial variables using advanced statistical and data mining techniques.

Other activities developed: Analysis of financial and operational ratios and indicators, contribution margins, equilibrium points financial statement analysis and. Analysis of contribution margins for product lines and analysis of equilibrium points.

I have been focusing on the continuous improvement of companies’ financial performance (as depicted by its ratios/indicators and its value generation capability).

Alfredo also has good understanding of Brazilian tax legislation.

Activities in the Area of Operations Research: Forecasting of financial variables (and other business related variables) with time series models, regression regressions, generalized linear models and neural models, nonparametric networks (especially Generalized Regression Neural Networks).

With clustering problems and classification problems, Alfredo has experience with the following techniques: K-means, Markov Clustering (MCL), SOM (Kohonen) Neural Networks, Probabilistic Neural Networks (PNN) and Decision Trees.

Alfredo also has experience handling large amounts of data and with Data mining and manipulation with SPSS, MATLAB, R and other technical softwares.

I’m also able to develop programs and codes in Visual basic for Microsoft Excel, R language, MATLAB, Mosel language for Express MP solvers; I have some knowledge of My SQL databases and basic notions of Java.

**EDUCATION**

* **PhD in Operations Research/ Production Engineering**. (with line of research in Machine learning, Neural Networks, Markov Clustering, Graph Clusterization, Data classification and clusterization and Statistics). **COPPE – UFRJ** –Alberto Luis Coimbra Research Institute of Engineering / Mathematics Institute(IM), 2014.

Thesis Title: “Use of Quantitative Methods in the Identification of Word Clusters in a Thesaurus with Applications in Personality Traits.”

* **Master of Production/Industrial Engineering/ Operations Research** (line of research in Statistics, Non Linear Optimization, Machine learning, Neural Networks, Data classification). COPPE – UFRJ – Alberto Luis Coimbra Research Institute of Engineering, 2010.

Dissertation Title: “Application of “Probabilistic Neural Networks” to Classification of the Risk of Death of Hospitalized Pacient with Acute Coronary Syndrome”

* **Bachelor in Economics**. Emphasis in econometrics. **UFRJ** - Federal University of Rio de Janeiro - Economics Institute, 2007.

Monograph Theme: “The Economic Dynamics under Kaleckian Theory Point of View”.

* **Graduate in Actuarial Methods**: specialist in Actuarial Methods, ENCE/IBGE, 2004.

Monograph Theme: “Investiment Analysis for Pension Funds”.

* **Bachelor in Business Administration – with emphasis in finance**. **IBMEC *Business School*** (Brazilian Capital Markets Institute), 1998.

Monograph Theme: “The Capital Market Efficiency”.

**PROFESSIONAL EXPERIENCE**

**INDEPENDENT CONSULTANT**

2006 – Today.

Working mainly on projects for companies belonging to comercial industries.

**OVERVIEW PESQUISAS (OVERVIEW RESEARCHES)**

06/2014 - Today

Position: **Analyst/ Economist**

Developed activities: Responsible for investment Project’ economic evaluation of client companies. Financial and. Economic analisys of industries. Application of statistical methods and data mining techiques for forecasting of financial variables and developing specific reports from large datasets.

Overview Researchs holds sectoral and market researches for major national and international clients; among which there are: the World Bank, Rio de Janeiro City Hall etc.

**PHR PHAMILIA RIBEIRO CONSULTING AND ADVISORY**

2012 - Today

Position: **Controller-Consultant**

Developed activities:

Construction and estimation of financial reports, analysis of contribution margins, break even points, financial ratios and indicators, sales forecasting, cost analysis and implementation of continuously improvement processes f or financial management of client companies.

**IBM BRASIL S.A.**

01/2005 – 12/2006

Position: **Customer Contract Representative (CCR)**

Developed activities: Preparo de contratos de leasing de computadores de grande porte para grandes clientes corporativos e governamentais nos Estados Unidos.

Preparation of mainframes leasing contracts for large corporate and government customers in the United States.

Analysis of credit reports, inventories, cash flows for the preparation of these leasing contracts.

**IRB BRASIL Re S.A.**

03/2002 – 12/2003

Position: **SPECIAL ADVISOR TO THE BORAD OF DIRECTORS LEVEL 1 - (MANAGEMENT OF ACTUARIAL SCIENCE AND STATISTICS)**

Developed activities: Collaborating in the development of an experimental study on bases of actuarial methodology for calculating risk retention for IRB reinsurance portfolios, using the Collective Actuarial Risk Theory.

Other activities:

* Preparation of monthly management report Analysis of the Technical Result of the company’s portfolios, taking into account also financial aspects, such as currency fluctuations, fluctuations in technical reserves and so on. This strategic report was forwarded to the Institute, the Director board and the Presidency.
* Participated in the preparation and monitoring of a periodic strategic report about the current retentions of each risk in IRB portfolio. This report was made ​​available to managers and chair of the IRB.

**EPRC Business Consulting**

03/2000 - 02/2002 and 2004

Position: **Consultant**

* Economic and financial analises of client companies, with emphasis on the following aspects:

1. Economic viability of projects. Using the expected net present value, with simulated net cash flows under specific scenarios.

2. Analysis of financial indicators.

3. Actuarial analyzes.

EPRC Business Consulting developed projects for medium and large corporate and governmental clients, such as Caixa Econômica Federal.

**ACADEMIC BACKGROUND**

**FACULDADE SÃO JUDAS TADEU (SÃO JUDAS TADEU FACULTY)**

Period: 01/2014 – Today

Position: Coordinator of the Business Administration Undergraduate Course and Teacher lecturing Financial Management

Developed activities: Coordination of the Business Administration Undergraduate Course during the first semester of 2014.

Teaching Financial Management.

**ASSOCIAÇÂO FLUMINENESE DE EDUCAÇÂO (FLUMINENSE ASSOCIATION OF EDUCATION)**

03/2007 – 08/2013

Position: Assistant Master Teacher

Developed activities: Teaching Quantitative Methods, Actuarial Calculus. Financial Management and Budget.

**SOCIEDADE UNIFICADA DE ENSINO SUPERIOR AUGUSTO MOTTA (UNISUAM)**

03/2007 – 12/2010 e 2012

Position: Auxiliary Teacher

Developed activities: Teaching Financial Budget, Operations Research and Introduction to Actuaries.

**ACADEMIC SUERVISIONS**

Co -supervisor of the monograph The Price Variation and Downstream Derivatives: A Systemic Approach to Management, prepared for the Information Systems MBA of the Fluminense Federal University (UFF) - CENTER FOR APPLIED SOCIAL STUDIES (2003). ANP (National Oil and Gas Agency) considered the publication of this monograph.

**RESEARCH BACKGROUND AND MAIN INTERESTS**

Considering the substantial experience applying Operations Research methods to corporate and academic problems, the main areas of research which I had great interest or at least some past experience are specified below.

**In the Operations Research/ algorithms** fields, I have past experience with *Analytics* and *Big Data*, specially related to:

- Clusterization and classification problems, *Machine Learning* and *forecasting techniques* (especially econometric techniques).

I also have interest in linear and nonlinear optimization (including integer and mixed-integer) and statistical inference problems (classical and Bayesian).

**In the financial area** I have interest in the following themes:

- Project valuation, company valuation and valuation in general.

- Beta estimation, specially accounting betas and its impacts in projects valuations.

- Estimation of the impact of decision makers’ personality on corporate financial performance (especially its value generation capability).

- Company’s’ cash flows (operational, investments and other types) estimations and forecasting.

- Corporate Budget preparation techniques and its uses in planning and control.

- Market efficiency tests, and its implications for investors.

- Predictive analysis of financial ratios for individual companies and industries.

- Use of Machine Learning techniques (especially Artificial Neural Networks, Support Vector Machines and Deep Learning) on the above mentioned problems.

- Clusterization and classification techniques applied to corporate finance and financial markets.

- Estimation of macroeconomic and international trade variables the impacts on industries performance.

**RECENTLY SUBMITTED PAPERS**:

PASSOS, A., R., F., LINS, M., P., E., NETO, L., B., 2014, “A Node Representation Algorithm for Undirected Acyclic Graph Clustering Using SOM”. Submitted for the Neural Networks and Computing Journal on 09-04-2014.

PASSOS, A., R., F., LINS, M., P., E., NETO, L., B., 2014, “Word Clusterization Methods in a Thesaurus Dictionary with Personality Traits in View”. Submitted for the Neural Networks and Computing Journal on 09-15-2014.

**PAPERS BEING PREPARED**:

Several articles are being prepared by me. The one on the verge to be submitted is entitled “An empirical comparison of machine learning models for oil market- related variables short-term forecasting”. Journal to be selected.

Other articles related to *machine learning* applied to corporate finance, forecasting methods, optimization, classification and clusterization algorithms, are also being developed and will be submitted in the future.

**SOFTWARE DEVELOPMENT**

Development of commercial software, with main focus in graph clusterization methods and graph algorithms, for applications in several different fields.

**PARTICIPATION IN RESEARCH GROUPS**:

Participant of the Psigma research group; dedicated to the research on performance measures , complex systems, data envelopment analysis (DEA), multi-disciplinary learning, multi methodology approaches, combination of methods and techniques of hard Operations Research (OR) with the ones of the soft OR, among other subjects (website: <http://www.psigma.org.br>).

**COMPLEMENTARY EDUCATION**

English course (from basic to advanced): Oxford Course (1990 -1996).

. Courses , Seminars and Lectures on Insurance, ALM , DFA (Dynamic Financial Analysis) , Methods Retention etc. , taught by FUNENSEG , FENASEG , SUSEP and IRB.

. Financial Derivatives Course. (Stock Exchange of Rio de Janeiro. 1997).

. Lecture on Management Investment Funds Speaker: Prof. Martin Gruber. (IBMEC and Banco do Brazil, 1997).

**LANGUAGES**

English. Fluent (Fluent level).

Portuguese. (Native level).

Spanish. Intermediate Level (Reads well, understands well. Speaks little).

French. Basic Level.

**COMPUTER SKILLS**

* Advanced user of MS- Office (Excel, Word, Power Point, and Internet)
* Optimization Softwares and solvers: Advanced user of LINDO e LINGO solvers. Intermediary user of XPress MP (and Mosel language)and What’s Best!
* Intermediary user of MATLAB language and toolboxes.
* Statistical and data mining Packages: user of the R language, DTREG and SPSS. Basic user of SAS.
* Programming languages and databases: basic understanding of the Java language. Past experience with My SQL.