THUENER SILVA

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EXPERIENCE

Senior Data Scientist
EPAM

📅 Apr. 2021 – Present   ⚲ Liverpool, United Kingdom

At EPAM I'm working on an international media planning optimization project with P&G.

- Usage of local and global optimization methods that are capable of handling non-linear constraints to create media optimization planning budget that saved millions of dollars to the company;
- Data analytics to improve decision making for programmatic data.

Senior Data Scientist
Greensill Captal

📅 Dec. 2020 – Mar. 2021   ⚲ Warrington, United Kingdom

At Greensill, a leading supply chain finance company, I have worked on researching and developing a forecasting tool to predict future earnings. The purpose was to provide reliable estimates of future income for each one of the clients.

- Research and develop a robust and scalable forecast for 45 clients for up to 52 weeks ahead;
- I adapted and extended state-of-art Facebook Prophet to include step-wise trends in the time series to achieve these goals;
- Construction of the production code integrates different systems and tools like ECS(AWS), Jenkins, Terraform, and SAS.

Research Manager
ExACTa Iniciative

📅 Dec. 2019 – Nov. 2020   ⚲ Rio de Janeiro, Brazil

I was the manager of several research groups. My responsibility was to coordinate and orientate the team on the research and development of solutions for Petrobras, one of the largest oil production companies in the world.

- Leadership as team research leader and mentor;
- Coordination of several research lines, optimization, artificial intelligence, computer vision, real-time analytics, and process mining;
- Implantation of 5 different solutions only in the first year;
- Those solutions saved millions of dollars for the company. Return on investment in the first year of 10x, and 50x was estimated for the second year;
- ExACTa earned an innovation award from Petrobras research center.

Postdoctoral & Teaching assistant & Tutor
Pontifical Catholic University of Rio de Janeiro

📅 Jun. 2015 – Nov. 2020   ⚲ Rio de Janeiro, Brazil

- I was a teaching assistant in graduate courses at the Department of Industrial Engineering in Decision and Risk Analysis, Capital Markets, and Mathematical Modeling;
- I advise and co-advise undergraduate and master thesis in topics related to asset allocation, corporate finance, energy markets, and metaheuristics;
- Also, participate in the examination board of Masters's programs in different departments (Industrial Engineering and Mathematics);
- Taught courses on Mathematical Modeling in Julia at PUC-Rio and Getulio Vargas Foundation (FGV) and postgraduate courses for Risk Trading at CEE;

PROFILE

Senior Data Scientist with a successful track record in delivering fast innovative solutions for projects, exceeding customer expectations. More than 10 years of experience in IT system construction and 5 years of successful coordination on R&D projects that saved millions of dollars. I spend 18 years learning and developing my skills during graduation, M.Sc. and Ph.D. in Computer Science. Experience in applying the best methodology to have the most value for the business, clearly defining desired results and profit.
I have worked on business problems in Supply Chain, Energy, Risk assessment, Fraud detection, Churn detection, and Oil production, using knowledge from different research areas, like Optimization, ML, CV, RTA, and process mining.

EDUCATION

D.Sc. in Computer Science – Optimization and Machine Learning
PUC-Rio - Department of Informatics
Dissertation title: Optimization Under Uncertainty for Asset Allocation (Scholarship: CNPq);

M.Sc. in Computer Science – Optimization and Machine Learning
PUC-Rio - Department of Informatics
Thesis title: Experimental Study of Techniques for Portfolio Optimization (Scholarship: CAPES);

Bachelor of Computing
PUC-Rio - Department of Informatics   Final Project: Subjective Analysis of Text Content Applied to Portuguese;

BUSINESS EXPERTISE

Media Planning   Supply Chain
Energy   Risk assessment
Fraud detection   Churn detection
Oil production

SOFTSKILLS

Team Leader   Team Work
Responsibility   Motivate
Problem-solving

- I am currently a reviewer for some journals such as the European Journal of Operational Research, Computational Optimization and Applications, Computers & Operations Research, and Applied Mathematical Modeling.

Research Associate
Laboratory of Applied Mathematical Programming and Statistics

📅 Jun. 2015 – Nov. 2019 📍 Rio de Janeiro, Brazil

I work on several R&D projects with companies of the Brazilian electric, oil and gas, and finance industries. The projects stand out for presenting a practical application for academic research with performance, which involves several challenges.

- Coordinated a R&D project entitled "Stochastic Optimization Models for Short-Term Oil Production" for Petrobras. Our results showed that it is possible to increase oil production by almost 1.5% if the optimization model accounts for the uncertainty;
- Development advisor on a R&D "Incorporating the effect of climate variability and contingencies in the optimal contracting strategy of transmission-usage amounts" for Enegisa. Our product is used to contract millions of Reais every year, mitigating the company's risk exposure. Nowadays, 70% of the contracts of the company is done using our software;
- Research advisor for machine learning research in credit card fraud and churn detection for Stone. In this project, we have to deal with a massive amount of transaction data.

Co-funder and Owner
Ápis-IS

📅 Nov. 2009 – Dec. 2012 📍 Rio de Janeiro, Brazil

- I researched methods for quantitative finance, portfolio optimization to mitigate risk exposition and increase return;
- We win a competition for the most profitable bot.

Trainee
Accenture

📅 Jun. 2006 – Jun. 2007 📍 Rio de Janeiro, Brazil

- Quality Assurance Analyst;
- I joined OI's billing group initially as a developer of simplified demands and later started as a quality assurance analyst (C code).

MAIN PUBLICATIONS (JOURNAL)

→ **Thuener Silva**, Davi Valladão and Tito Homem-de-Mello, "A Data-Driven Approach for a Class of Stochastic Dynamic Optimization Problems" *Computational Optimization and Applications, Sep. 2021*.

→ Mateus Waga, Davi Valladão, Alexandre Street, **Thuener Silva** "Disentangling Shareholder Risk Aversion from Leverage-Dependent Borrowing Cost on Corporate Policies," *European Journal of Operational Research*, Jan. 2017.

→ Carlos E. Andrade, **Thuener Silva** and Luciana S. Pessoa "Minimizing flowtime in a flowshop scheduling problem with a biased random-key genetic algorithm," *Expert Systems with Applications*, Aug. 2019.

→ Davi Valladão, **Thuener Silva** and Marcus Poggi "Time-consistent risk-constrained dynamic portfolio optimization with transactional costs and time-dependent returns," *Annals of Operations Research*, Aug. 2018.

→ **Thuener Silva**, Plácido R. Pinheiro and Marcus Poggi "A More Human-like Portfolio Optimization," *European Journal of Operational Research*, Jan. 2017.

RESEARCH FIELDS

Machine Learning:

SVM	Decision Trees	Boosting
Random Forests	Neural Networks
ML Interpretability	Concept Drift
Deep Learning	LSTM	Data Mining
Computer Vision	Real-Time Analytics
Temporal Series	NLP

Optimization:

Optimization under Uncertainty	SAA
SDDP	Multi-stage Optimization
Genetic Algorithms	Risk measures
Stochastic Optimization	Benders
Portfolio Optimization	Branch-and-cut
Robust Optimization

TECHNICAL EXPERTISE

- Main Development Languages

Python | Julia | C++ | Java | MATLAB | PL/SQL

- Cloud

AWS | Azure | Azure SDK | ECS | EC2 | Lambda function | S3 | Blob | ML SaaS | Stream Analytics | Terraform

- Machine Learning and Statistics

Scikit-learn | SciPy | PyTorch | Keras | LightGBM | XGBoost | fbprophet | StateSpaceModels | MLPACK | Weka | LIBSVM

- Optimization

JuMP | SDDP | PuLP | Pyomo | Concert | CPLEX | Gurobi | Xpress | Optim | LightGraphs

- Databases

PostgreSQL | MySQL | Oracle | Big Query

- Vizualization

Plots | Matplotlib | Plotly | Jupyter

- Others

Pandas | Linux | Virtual Env. | Docker | DevOps | Agile Dev. | Lean R&D | Grafana

LANGUAGES

Portuguese fluency, English fluency, French basic, Spanish basic