

LUIZ SOARES DE ANDRADE FILHO

Academic Curriculum Vitae

Complex Systems · Network Science · Agent-Based Modeling · Computational Economics · Public Policy

Brasília, Brazil | Institute for Applied Economic Research (Ipea) | Lattes: lattes.cnpq.br/3684329955668828 | LinkedIn: linkedin.com/in/luiz-soares-af/

RESEARCH PROFILE

Researcher and public-sector technology professional with a background in Computer Engineering, a Master's degree in Teleinformatics Engineering, and postgraduate specialization in Information Systems Development and Management. Early academic work focused on pattern recognition, neural networks, evolutionary computation, time-series applications, and intelligent systems. Current research interests center on complex systems, network science, agent-based modeling, computational economics, computational social science, and computational approaches to public policy. At Ipea, combines data-intensive public-sector work with an interdisciplinary research agenda connecting computation, economics, institutions, and public policy.

CURRENT AFFILIATION & RESEARCH ACTIVITIES

Técnico de Planejamento e Pesquisa (TPP) — Institute for Applied Economic Research (Ipea) | 2024–present | Brasília, Brazil

- Works in information systems and research, with applied activities involving data integration, data quality, analytical systems, automated data workflows, and institutional data infrastructure.
- Current academic agenda emphasizes complex systems and computational methods applied to economics and public policy.

Member, LASPP — Ipea complex-systems study/research group | late 2025–present

- Participates in an interdisciplinary group of Ipea researchers interested in complex systems and related computational approaches, with collaborative discussion of research questions and development of studies and publications.

RESEARCH INTERESTS

Complex Systems; Network Science and Complex Networks; Agent-Based Modeling; Computational Economics; Computational Social Science; Data Science; Pattern Recognition; Evolutionary Computation; Time Series; Computational Methods for Public Policy.

EDUCATION

M.Sc. in Teleinformatics Engineering — Federal University of Ceará (UFC) | 2011–2014 | Brazil

- Concentration: Signals and Systems. Advisor: Prof. Guilherme de Alencar Barreto.
- Dissertation: Projeto de Classificadores de Padrões Baseados em Protótipos Usando Evolução Diferencial.
- Keywords/topics: prototype-based classification, competitive neural networks, Learning Vector Quantization, model selection, and Differential Evolution.

Postgraduate Specialization in Information Systems Development and Management — Faculdade JK | 2014–2015 | Brasília, Brazil

- 360-hour lato sensu postgraduate program.

B.Sc. in Computer Engineering — University of Pernambuco (UPE) | 2003–2008 | Brazil

- Undergraduate project: SIRP — Sistema Inteligente de Reconhecimento de Partituras. Advisor: Prof. Carmelo José Albanex Bastos Filho.

SELECTED PUBLICATION

ANDRADE FILHO, L. S.; ALENCAR, G. B. “On the Efficient Design of a Prototype-Based Classifier Using Differential Evolution.” IEEE Transactions on Computational Intelligence and AI in Games, 2014.

RESEARCH PROJECT

InteliColheita — University of Pernambuco | 2005–2006 | Research project

- Coordinated an intelligent decision-support project applying neural networks to agricultural time series for crop-harvest prediction and decision support.
- The project also included a mobile decision-support data-visualization application using georeferenced GPS data. Collaborator: Prof. Fernando Buarque de Lima Neto.

SELECTED ACADEMIC & RESEARCH TRAINING

Sistemas Complexos I (SCX5002-4/7) — University of São Paulo (EACH-USP) | 2025

- Graduate-level course; 150 hours; final grade A; 93% attendance.

Modelos Econômicos Baseados em Agentes (SCX5015) — University of São Paulo (EACH-USP) | 2026–present

- Graduate-level course in agent-based economic modeling; currently enrolled in the second semester of 2026.

Introduction to Complexity — Santa Fe Institute | 2025

- Foundational course in complexity science.

Introdução às Redes Complexas, com aplicações, utilizando Python e IA/LLM — University of São Paulo (EACH-USP) | 2025

- Training in complex networks with computational applications in Python.

Fundamentos de Probabilidade e Estatística para Ciência de Dados — University of São Paulo | 2025

- Training in probability and statistical modeling for data science.

Selected Data Science coursework — Escola Nacional de Administração Pública (Enap) | 2024–2025

- Governança de Dados; Introdução à Ciência de Dados — Tratamento de Dados; Modelos de Regressão; Redes Complexas.

Fundamentals of Deep Learning — NVIDIA | 2022

SELECTED PROFESSIONAL EXPERIENCE

Analista em Tecnologia da Informação — Advocacia-Geral da União (AGU) | 2017–2024 | Brazil

- Worked in the Laboratório de Recuperação de Ativos (Labra) on data treatment, analysis, and data mining.

Analista de Tecnologia da Computação — Ministry of Planning, Budget and Management | 2016 | Brazil

- Public-sector technology role associated with federal information systems and digital-government initiatives.

Analista de Sistemas — DATAPREV | 2009–2014 | Brazil

Software Engineer / Software Development — Policentro / Ecil | 2006–2009 | Brazil

- Worked on software engineering and systems development, including the E-Fisco system for the State of Pernambuco tax administration.

Elaborador — Cebraspe | 2018–2019 | Brazil

- Contracted contributor for assessment/exam-related activities.

SELECTED TECHNICAL & QUANTITATIVE METHODS

Python; Java; SQL and databases; data engineering and ETL; workflow orchestration; business intelligence; data quality and governance; pattern recognition; neural networks; evolutionary computation; time-series analysis; network analysis; agent-based modeling (current research development).

SELECTED COMPETITIVE PUBLIC EXAMINATIONS

- Ipea — Técnico de Planejamento e Pesquisa (TPP), Systems Development | 2024 — approved in a highly competitive federal public examination.
- Ministry of Planning and Budget (MPO) — Analista de Planejamento e Orçamento (APO), Budget Systems | 2024 — approved in a highly competitive federal public examination.
- Federal District Court of Accounts (TCDF) — Auditor de Controle Externo, Information Technology / IT Systems | 2024 — approved in a highly competitive public examination.

LANGUAGES

- Portuguese — Native.
- English — Good reading and writing; intermediate/upper-intermediate speaking and listening; ongoing advanced academic-English preparation.

ACADEMIC & PROFESSIONAL LINKS

- Lattes CV: <http://lattes.cnpq.br/3684329955668828>
- LinkedIn: <https://www.linkedin.com/in/luiz-soares-af/>
- Personal academic website: <https://luizsoares.org>