



POSTDOCTORAL FELLOWSHIP IN ANALYTICS AND PUBLIC SECURITY

FAPESP Fellowship linked to the project *FGVanalytics* – Public Security Policies Analytics Research Center

Location: Fundação Getulio Vargas (FGV), São Paulo School of Management (FGV EAESP), Public Security Policies Analytics Research Center (*FGVanalytics*), São Paulo, Brazil.

Supervisor: João Luiz Becker

Application Deadline: 11 May 2024

Starting Date: 3 June 2024 or later

Period: 12 months renewable for up to 48 months in total

Summary

FAPESP postdoctoral positions are available at FGV/EAESP in the city of São Paulo (Brazil) to integrate the research team working on the project *FGVanalytics*. The fellowship will be initially for 12 months with a possible extension of up to 48 months (in total), following the norms of the São Paulo Research Foundation – FAPESP (www.fapesp.br/en/postdoc).

Organization and Location

The postdoctoral fellow will work at FGV/EAESP – Fundação Getulio Vargas (FGV), São Paulo (Brazil) – <https://portal.fgv.br/en>. Founded in 1944, FGV has extensive experience in academic and applied research in social sciences and has a long history in coordinating international projects. FGV is one of the most influential institutions in Latin America and beyond. It ranks as one of the best-managed in the world and among the top 10 think tanks globally by the Global Go To Think Tank Ranking. FGV/EAESP ranks among the top management schools in Latin America, receiving the highest scores in its evaluation by the Brazilian Ministry of Education (MEC and CAPES) and holding the three main international accreditations (AACSB, EQUIS, and AMBA).

The Project *FGVanalytics* (Public Security Policies Analytics Research Center)

The Center for Analytics and Security Policy Studies (*FGVanalytics*) is the result of the Science for Development Program initiative of the São Paulo State Research Foundation (FAPESP), which aims to solve problems of social and economic relevance in the State of São Paulo, financing medium and long-term internationally competitive research projects to be carried out by teams from research institutes and universities or higher education institutions, in partnership with government agencies and, whenever possible, involving companies or non-profit organizations. FAPESP fostered the creation of Problem-Oriented Research Centers in São Paulo (NPOP-SP) to articulate the projects. *FGVanalytics* benefitted from a broad cooperation agreement between FGV and the São Paulo Public Security Secretariat, with funding from FAPESP and a duration of 5 years.

Public security intelligence (PSI) is the ongoing and systematic exercise of specialized actions to identify, evaluate, and monitor potential threats to public security. Its activities aim to produce and safeguard the necessary knowledge to support policymakers in planning and executing public security actions to predict, prevent, neutralize, and deter criminal acts that menace public order and the security of people and property. It uses structured processes to gather data and information to establish control over crime by identifying patterns and trends that can disrupt public order. Thus, the final goal of PSI is to support the operational efforts of the police and civil defense forces to mitigate and predict criminal phenomena and other dangers to public security. Data analysis and knowledge

dissemination across public security institutions are essential dimensions of PSI activities and are the core aspects of this research project.

Intelligent systems facilitate PSI activities by producing knowledge about phenomena of interest to the police forces. On the other hand, from the tactical and operational standpoints, the dynamics of criminal activity may not emerge if a system for short-term prediction supporting policing actions, scheduling decisions, and the definition of focus areas for more effective crime deterrence is absent. Identification of patterns from data, which is the main objective of machine learning (ML), can support decisions about public security.

In broad terms, the project will foster the development of Decision Support Systems (DSS) for:

- (1) improving the process of collecting and disseminating data, thus facilitating access and cross-referencing of information, including georeferencing;
- (2) identifying techniques for automated generation of data and their application in the context of public security and evaluation of policies;
- (3) implementing ML to support the operations of the military and civil police forces;
- (4) implementing unsupervised ML techniques to categorize events by similarity, to identify patterns of occurrences that can serve as inputs to define policing tactics according to the profile of the police precincts;
- (5) predicting the types of occurrences that are most probable in each precinct, based on its socio-political characteristics and the existing infrastructure, using supervised ML techniques;
- (6) developing algorithms to support decisions on policing tactics controlled by the socio-economic profile of cities and crime patterns; and
- (7) creating data collection and processing architectures that enable automated formulation of indicators for monitoring and evaluating public policies.

These are the short- and medium-term objectives pursued by the proposed Center.

FGV*analytics* mission is to create a research framework that accelerates the use of data and Artificial Intelligence (AI) tools for decision-making in public security, providing the technical structure and coordination between key players to stimulate the development of evidence-based public policy assessment tools. Our researchers are cooperating with the Secretary of Security and the São Paulo Police Department to develop tools to help prevent and control crime. Furthermore, the Center is responsible for monitoring the incorporation of new tools and technologies to assess their impact on police activity and thus maximize their benefits.

The Center structures its activities on two fronts:

1. Developing big data, AI tools, decision support systems (DSS) and monitoring the results of decisions based upon them; and
2. Public security policies evaluation.

The Fellowships

The postdoctoral FAPESP fellowship is an opportunity to work with cutting-edge research with some analytics and public security leading scholars, supporting the development of the research project together with the project leader and research consortium, and the proposals should advance our understanding of innovative solutions to the problem of public security in both technical-scientific and institutional aspects.

The postdoctoral fellows will interact with other researchers and practitioners involved in the project, cooperating with the São Paulo Public Security Secretariat to conduct the studies, publish research results in peer-reviewed academic outlets (guaranteeing the scientific quality of the research), and disseminate the findings to decision-makers in governments and civil society organizations (to increase the research impact in practice).

FAPESP fellowship recipients should also help the project leader to integrate the different research

activities and safeguard good communication among partners and stakeholders. They also will be responsible for the scientific part of the data management and will work closely with the associates to ensure wide dissemination of the research results among academics and practitioners.

Qualifications

- a. Candidates should have concluded a doctorate less than seven years before the beginning of the fellowship.
- b. The fellowship demands full-time dedication to the research project (except under conditions outlined in resolution PR N° 13/2009, 15 July 2009: <https://fapesp.br/index.php/5268/portaria-pr-no-132009> - in Portuguese).
- c. The fellowship holder may not hold any formal or informal employment nor receive, during the term of the fellowship, a fellowship from another entity, salary, or remuneration deriving from the exercise of activities of whatever nature (except under conditions outlined in the decree PR N° 13/2009, 15 July 2009: <https://fapesp.br/index.php/5268/portaria-pr-no-132009> - in Portuguese).

For more information, please access: <https://fapesp.br/en/postdoc>.

Application Process

Please send the following documents to analytics@fgv.br with the subject *FGVanalytics* Postdoc by the deadline:

- Updated curriculum on the Lattes Platform or similar in the case of foreign candidates;
- Cover letter or e-mail explaining how the applicant's participation in this research may contribute to his/her education and career;
- Work plan for the research (10 pages maximum) to be developed within the scope of the Public Security Policies Analytics Research Center (*FGVanalytics*), containing:
 - i) title;
 - ii) names of the scholarship applicant and the supervisor;
 - iii) home institution;
 - iv) abstract;
 - v) description of objectives;
 - vi) research plan, including methodology, bibliography, and schedule of expected results; and
 - vii) justification of the research plan regarding the objectives of the FAPESP PD Scholarship Program, described in: <https://fapesp.br/en/postdoc>.

ONLY SHORTLISTED CANDIDATES WILL PASS TO THE NEXT STEP IN THE RECRUITING PROCESS.