

PABLO A. ASTUDILLO-ESTÉVEZ, Ph.D, M.Sc, B.Eng

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Researcher at the *University of Oxford* in Economic Geography and Complexity Economics. Consultant and Data Scientist in the *Global Practice of Finance, Competitiveness and Innovation* of the *World Bank*. Former research fellow at the Growth Lab at *Harvard University* and former Research Assistant at the *Massachusetts Institute of Technology*. He has developed projects to understand and strengthen business and innovation ecosystems in Asia, Central Europe, and Latin America using advance data analytics. He developed one of the most exhaustive studies on productive diversification and economic complexity for Ecuador. Additionally, he also advises governments and the private sector on ways to develop the foundations for sustainable, technology-enabled economies as well as to harness the power of disruptive technology and data to solve development challenges. Winner of the World Bank's Development Prize - Ecuador and several academic awards, including SENESCYT'S Excellence Scholarship.

RELEVANT WORK EXPERIENCE

WORLD BANK, USA

Oct 2019 –

Consultant - Senior Data Scientist at the Finance, Competitiveness & Innovation Global Practice

- Coordinate and lead the quantitative analysis for the strategy to develop and strength the entrepreneurship and innovation ecosystem in Romania. Strategy that will guide the investment of 5,000 million Euros, provided by the European Commission and the World Bank Group, for the post-Covid economic reactivation. RoStartup.
- Coordinate and lead a team from the World Bank, Romanian Government and private companies for the development of the ROStartup strategy report.
- Connectivity analysis of the networks of investors, accelerators and other supporting infrastructure of the founders of start-ups. Identification of key actors of the ecosystem.

Consultant - Senior Data Scientist at Start-Ups and Innovation Ecosystems Project - Japan

- Lead the quantitate analysis of the Japan/Tokyo Entrepreneurial ecosystem
- Connectedness analysis of start-ups' founders' social networks, investors, accelerators and other supporting infrastructure.
- Connectedness analysis of the Tokyo Ecosystems with other global international ecosystems, mainly focusing on Unicorns and High-Tech firms.
- Detailed analysis of the main relevant actors of the ecosystem, and their connection with different local and international institutions
- Develop of networks 'data and geographical visualisation tools to support the analysis done.
- Support the design of surveys to gather fine grain information about the Entrepreneurial ecosystem

Consultant - Data Scientist at Social Analytics and Visualization COVID19 Project

- Data and geographical analysis of people's movement of fine-grained India based on Facebook user's data.
- Develop and support the development of interactive data visualisation tools to explore mobility patters during the pandemic in India.

INTER-AMERICAN DEVELOPMENT BANK, USA

Aug 2018 – Sep 2019

Consultant

- Analysis of Andean transportation networks and trade efficiently, through big data (5 countries) (finished)
- Firm survival analysis for Latin America: developed algorithms (mining and NLP) to compile and analysis firm / CEO data of the 1 MM biggest firms (finished)
- Analysis of Venezuela Infrastructure from Satellite Imaginary and Computer Vision (pilot)

HARVARD UNIVERSITY, Centre for International Development, USA

Oct 2018- Oct 2019

Research Fellow at the Growth Lab with Prof. Ricardo Hausmann

- Lead researcher on:
 - Subnational trade networks and spatial economics. Analysing inter-city and inter-industry subnational balances of trade and local economic growth using big data and cloud-based technologies (Google Earth Engine and Google Cloud).
 - Development of subnational industrial tradability and non-tradability indexes

MASSACHUSETTS INSTITUTE OF TECHNOLOGY, MIT Media Lab, USA

Jan 2017- Jul 2018

Visiting Doctoral Researcher at the Collective Learning Group, with Prof. Cesar Hidalgo

- Lead researcher on:
 - Productive networks and knowledge for economic diversification (analysing more than 1000 millions of observations of individual transactions between all the firms in the Ecuadorian economy)
 - Firm output and survival rates of firms based on regional characterization (analysing the emergence and extinction of firms using machine learning and econometric modelling).
 - Global Foreign Direct Investment and economic relatedness (analysing global data of bilateral FDI flows and stocks)
- Development of the Production Network Explorer for Ecuador (beta version), which is a visualization platform to explore 45 000 firm's data

VIETNAM GOVERNMENT

Aug 2017 – Jul 2018

Consultant

- Economic Complexity Analysis of Ho Chi Minh City and export potential.
- Connectiveness analysis of international trade links of Ho Chi Minh City exports.

UNIVERSITY OF OXFORD, School of Geography and the Environment, UK

2014 - 2020

Doctoral candidate under the supervision of Prof. Gordon L. Clark

- Thesis: *"Towards a Post-Oil Economy: A Complexity Approach to Understanding Natural Resource Dependency and Economic Diversification in Ecuador"*
- Lead researcher on:
 - Oil boom and structural change in Ecuador, a long-lasting curse? Applied network analysis tools and synthetic control methods to identify individual industrial impacts from the 1972 Oil boom, using 30 years of National Input-Output data.
 - Subnational productive diversification and regional dynamics of oil exporting countries.

OXFORD INTERNATIONAL INFRASTRUCTURE CONSORTIUM, UK

Jun - Aug 2016

Consultant

- Developed algorithms to compile a dataset of more than 4000 investors, academics and policy makers interested in infrastructure development worldwide using data mining techniques

SUSTAINABLE FINANCE PROGRAMME, Smith School of Enterprise and Environment, U of Oxford, UK

Jan - Aug 2015

- Co-authored the Lloyd's of London Report on the Impacts of Stranded Assets in the insurance industry
- Supported the assembling and compilation of a global database on thermoelectric power plants and carbon dioxide emissions – one of the most comprehensive in the world using data mining tools

MINISTRY OF ENVIRONMENT - Climate Change Under-Secretariat, Quito - Ecuador

Jan 2010 – Aug 2012

Acting National Director of Climate Change Mitigation; International Climate Policy Coordinator

- Advised policy makers on high-level decisions related to climate change, international climate policy and sustainable development
- Coordinated and advised the inter-ministerial committee for developing national policies on climate change and sustainable development. The committee consisted of high-level authorities from 8 to 10 different Ministries.
- Generate relevant policy documents to guide decision making for high-level authorities in the country.
- Created and coordinated the inter-sectoral committee for the international climate change negotiations.

EDUCATION

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- **University of Oxford, UK** 2014-2020
DPhil (PhD) in Economic Geography and Complexity Economics
 - **University of Edinburgh, UK** 2012-2013
MSc in Environment and Economic Development (Distinction)
 - **Universidad Central del Ecuador, Ecuador** 2002-2008
Environmental Engineering

LATEST TRAINING

- **Massachusetts Institute of Technology, USA** 2019
 - Deep Learning (6.S.191)
 - Applied Data Visualization (MAS.S70)
 - Augmented Reality
 - Networks Science
- **Harvard University, USA** 2018-2019
 - Machine Learning (CS.181)
 - Cities, Infrastructures, and Politics: From the Renaissance to Smart Technologies (HIS-4374)
 - Mapping: Geographic Representation and Speculation (SCI-6322)

DATA ANALYSIS AND VISUALIZATION TOOLS

- **Programming Languages**
 - Python (Advance)
 - R (Medium)
 - JavaScript (D3, D3 Plus, Networkx)
 - HTML
- **Data Bases**
 - SQL
- **Statistical and Mathematical Analysis Software**
 - Stata
 - Matlab

LANGUAGES

- English (proficient)
- Spanish (mother language)

AWARDS

- SENESCYT Scholarship of Excellence, Organization of American States, Full Scholarship 2011, World Bank, Development Marketplace First Prize 2007