

Author of transformer, attention, rnn, HomomorphicEncryption, and HEtools software libraries in Python, Julia, R. Author of book “Transformers from Scratch in R” (forthcoming). Experience: 20+ full-stack, 15+ Data Science, 12+ Machine Learning. Linux, Kubernetes, ETL, DevSecOps.

Employment

- 2017-23 RESEARCHER | UNITED NATIONS (ITU), GENEVA
Machine learning project coordinator at the United Nations Specialized Agency for ICT (ITU). Co-Secretary of the ITU-World Health Organization Focus Group on AI for Health (from creation in 2018). Awarded the ITU Staff Award for 2020 (innovation). Developed AWS platform for ML-analysis of webinars (transcribe, translate, object ID).
- 2016-17 RESEARCHER | UNITED NATIONS (UNCTAD), GENEVA
Develop and conduct economic impact evaluation of EAC Free-Trade Agreement via Computation General Equilibrium programming (GTAP).
- 2015-16 ECONOMIST | THE INTERNET SOCIETY, GENEVA
Paper on exogenous increase in availability of local language content and internet adoption, presented at EEA 2016 | Conceptualised and executed report “Promoting Local Content in Africa” presented at Africa Internet Summit, leading to Google update ad policy.
- 2013-15 RESEARCH CONSULTANT | COGINTA, GENEVA / GUINEA
Directed a large scale representative baseline survey of Conakry (Guinea) population. Conducted analysis for Canton of Geneva commissioned survey on police victimisation.
- 2014-15 RESEARCH ASSISTANT | CENTRE ON CONFLICT, DEVELOPMENT AND PEACEBUILDING W. “Institute Nationale du Development” (govt. Morocco); direct survey on behaviour and community relations, using a Regression Discontinuity Design identification strategy.
- 2013-14 RESEARCH ASSISTANT | CENTRE FOR FINANCE AND DEVELOPMENT, GENEVA
Developed survey design on remittances from Geneva | Redeveloped Centre’s website.
- 2013-14 TEACHING ASSISTANT | THE GRADUATE INSTITUTE, GENEVA
Teach weekly Masters’ Statistics workshops | Supervised Masters’ Research Projects.
- 2012 RESEARCH CONSULTANT | DUTCH DEVELOPMENT FINANCE INSTITUTE FMO, THE HAGUE
Designed and directed survey on implementation of environmental, social, and governance best practices among FMO-invested hedge funds.
- 2009 RESEARCH ASSISTANT | UNIVERSITY OF GRONINGEN, NETHERLANDS
Data collection and analysis for Ministry of Economics Affairs.

Education

- 2012-16 PHD IN DEVELOPMENT ECONOMICS | THE GRADUATE INSTITUTE GENEVA
Jury: Richard Baldwin (president), Jean-Louis Arcand (supervisor) & Michael Kende
Internet Adoption in Africa | Trade & Global Value Chains | Gender and Child Growth
- 2010-12 MASTER IN QUANTITATIVE ECONOMICS AND FINANCE | UNIVERSITY OF ST. GALLEN
Research for Dr. Pietro Veglio, Executive Director of the World Bank
Microhydropower in remote dev. countries, at the World Bank (D.C.)
- 2006-10 BSC ECONOMICS | UNIVERSITY OF GRONINGEN
- 2006-10 BA THEORETICAL PHILOSOPHY | UNIVERSITY OF GRONINGEN

Software experience

R, Python, Julia, C++, Go, Javascript, Bash, Java, MariaDB / MySQL, SQL, NoSQL, Tensorflow, Keras, PyTorch, Kubernetes, Docker, Git, HTML / XML, Microsoft Office, Google Docs, Linux, L^AT_EX

Selected Research Papers

- 2017 “Global Value Chains in LICs” | *CTEI Working Paper Series*
- 2016 “Making the Next Billion Demand Access” | *CFD Working Paper* | *G7 briefing notes*
- 2015 “decompr: GVC decomposition in R” | *CTEI Working Paper Series*

Conference Presentations

- 2016 “Making the Next Billion Demand Access: The Local-Content Effect of google.co.za in Setswana” | *EEA Annual Conference 2016*
- 2013 “Urban Violence and Collective Efficacy in Karachi and Dhaka” | *Pictet Foundation / Centre for Finance and Development Conference 2013*

Other Publications, Op Eds and Short Notes

- 2017 “Global Value Chains in Developing Economies” | *VoxEU*

Software Development

- 2016 rnn CRAN. Recurrent Neural Network architectures in native R. multilayer Recurrent Neural Networks (Deep Learning) | > 50,000 downloads
- 2016 datasets.load CRAN. utilities and Graphical User Interface for loading datasets > 50,000 downloads
- 2015 decompr CRAN. Global Value Chain decomposition. Implementation of Wang-Wei-Zhu GVC decomposition algorithm | > 30,000 downloads | Used for: World Bank GVC study, VoxEU GVCs eBook, WTO Annual Report
- 2015 sigmoid CRAN. Sigmoid functions (logistic, Gompertz), inverses (logit), and SoftMax | >50,000 downloads
- 2015 rddtools CRAN. Framework for Regression Discontinuity Design | > 25,000 downloads
- 2014 gvc CRAN. Tools for Global Value Chain analysis | > 20,000 downloads
- 2014 diagonals CRAN. Tools for manipulating fat-diagonal matrices, e.g. block matrices

Languages

English (native), Dutch (native), Spanish (advanced), German (advanced), French (advanced)

Affiliations

Ifo Economists Expert Group (University of Munich, for Switzerland)

Centre for Finance and Development; The Graduate Institute, Geneva