BASTIAAN QUAST PHD
HTTPS://BASTIAANQUAST.COM/ | BQUAST@GMAIL.COM

Author of `transformer`, `attention`, `rnn`, `HomomorphicEncryption`, and `HEtools` software libraries in `R`. Author of "Transformers from Scratch in R" (forthcoming). Experienced developer in `Python`, `TensorFlow`, `PyTorch`, `MatLab/Octave`, `Git`, `Linux`, `PowerBI`, `Tableau`, `Excel`. DevSecOps, GitOps, CI/CD, ETL.

Employment

2017-23   RESEARCHER | UNITED NATIONS (ITU), GENEVA
Researcher; Machine Learning, Built Homomorphic Encryption (Python, R, Julia) library. Developed AWS (Kubernetes/Docker) transcript and translation platform, trained custom SageMaker models. Built Flask web app for QR codes of itu.int domains. Android (Java/Kotlin) and iOS apps.

2016-17   RESEARCHER | UNITED NATIONS (UNCTAD), GENEVA
Impact evaluation of FTAs on Developing Countries (East African Community), using 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 | Conceputalised and executed report "Promoting Local Content in Africa" presented at Africa Internet Summit, leading to Google update advertising policy to help monetise African language content. Global Latency measurements (Dyn).

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
Collaborated with the "Institute Nationale du Development Humaine" (govt. Morocco) to supervise 400-household sruvey, using RDD 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
Taught weekly Masters' Statistics workshops | Supervised Masters' Research Projects

2012   RESEARCH CONSULTANT | DUTCH DEVELOPMENT FINANCE INSTITUTE FMO, THE HAGUE
Designed and directed survey on ESG funds performance

2009   RESEARCH ASSISTANT | UNIVERSITY OF GRONINGEN, NETHERLANDS
Data collection and analysis for Ministry of Economics Affairs commisioned survey

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. Piedro 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

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

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   The Internet Adoption from `google.co.za` in Setswana" | *EEA Annual Conference 2016*

2013   "Urban Violence and Collective Efficacy in Karachi and Dhaka" | *Pictet Foundation*

Other Publications, Op Eds and Short Notes

2017   "Global Value Chains in Developing Economies" | *VoxEU*

Software Development

2023   `HEtools` *PyPI.* Homomorphic Encryption (BFV, BGV, CKKS).

2023   `HEtools` *Julia General Registery.* Homomorphic Encryption (BFV, BGV, CKKS).

2023   `HomomorphicEncryption` *CRAN.* Homomorphic Encryption (BFV, BGV, CKKS).

2023   `libactication` *PyPI.* Activation functions (sigmoid, logistic, Gompertz, ReLU).

2022   `transformer` *CRAN.* transformer blocks (attention, feed-forward neural networks).

2016   `rnn` *CRAN.* Recurrent Neural Network architectures in native R.

2016   `datasets.load` *CRAN.* utilities and Graphical User Interface for loading datasets | 130k

2015   `decompr` *CRAN.* Global Value Chain decomposition.

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)