Ian Helfrich, Ph.D.

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APPLIED ECONOMIST · QUANTITATIVE RESEARCH DESIGNER · EDUCATOR

EXECUTIVE PROFILE

Applied economist and quantitative research designer with a Ph.D. in Economics from Georgia Tech. Research spans public finance, labor and technology, international trade, and spatial measurement, with an emphasis on empirical design and reproducible analysis. Teaching includes undergraduate economics, executive education, online instruction, and quantitative research-design coaching for doctoral researchers and working professionals.

TRANSFERABLE VALUE

RESEARCH DESIGN

Turns ambiguous mandates into estimands, data architectures, identification strategies, robustness plans, and appropriately bounded claims.

EVIDENCE ENGINEERING

Builds inspectable pipelines linking sources, transformations, models, tables, figures, decision logs, and public evidence products.

QUANTITATIVE COACHING

Guides students, doctoral researchers, working professionals, and executive-level clients through economics, econometrics, statistics, research design, Python, SQL, Stata, and GIS.

TRANSLATION AND JUDGMENT

Explains assumptions, uncertainty, failure modes, and decision consequences without flattening the underlying technical problem.

SELECTED RESEARCH AND EVIDENCE SYSTEMS

The Rural Mobilization Gap in a U.S. Place-Based Tax Credit
Sole-authored working paper; original study by Ian Helfrich | Project contributors: Katia Antunes and Elizaveta Gonchar | August 2026

- Built an auditable project-level panel from 19,907 CDFI Fund transactions covering 8,024 New Markets Tax Credit projects, $66.6 billion in qualified low-income community investments, and $120.9 billion in total project cost.
- Used fixed effects, an order-invariant Gelbach decomposition, quantile methods, clustered inference, bootstrap tests, margins, and subgroup diagnostics. In the base decomposition, observed CDE composition accounts for −0.185, or 86% of explained movement; the design is descriptive and noncausal.
- Linked source hashes, model outputs, manuscript values, tables, figures, and a public evidence viewer so readers can inspect both findings and limits.

Human or Machine? Out-of-Time Validation of Task-Level AI Exposure Ratings
Sole-authored work in progress

- Linked 19,265 occupation-task records across 923 occupations to six later public task-use measures; compared trained-human and GPT-4 ratings with within-occupation models and paired cluster bootstraps.
- Keeps out-of-time measurement validation separate from contemporaneous comparisons and from unsupported employment-effect claims.

Trade in the Spotlight
With Elizaveta Gonchar | SSRN 5202676 | 2025 preprint

Constructed annual population- and nightlight-weighted distance measures and evaluated their contribution to gravity models of interstate and international trade.

PROFESSIONAL PRACTICE

Independent Economist and Quantitative Researcher | Self-directed and collaborative applied research — 2024-present

Lead work from problem definition and data construction through econometric analysis, adversarial robustness testing, technical writing, and inspectable research products.

Independent Quantitative Instructor & Research-Design Coach | Wyzant and direct practice — 2021-present

- Tutor and coach across economics, econometrics, statistics, finance, strategy, quantitative marketing, research methods, Python, SQL, Stata, and GIS, from AP/IB through graduate, doctoral, professional, and executive-level work.
- More than 1,035 hours through Wyzant as of August 2026, with a 5.0/5 public rating; nearly 1,000 additional direct tutoring and executive-level research-design coaching hours outside the platform.

Independent Economic Advisor | Industrial-sector diagnostics — 2026-present

Developed a diagnostic methodology spanning growth constraints, indicator selection and sequencing, composite-index construction, and international benchmarking.

Ian Helfrich, Ph.D.

Applied economist · quantitative research designer · educator

TEACHING AND EXECUTIVE EDUCATION

Instructor of Record & Graduate Teaching Assistant | Georgia Institute of Technology — doctoral appointment

- Instructor of record for three undergraduate economics courses; also led sections, recitations, assessment, and grading across the economics curriculum.
- Georgia Tech Economics Graduate Teaching Assistant of the Year, 2023.

Graduate Teaching Fellow | Georgia Tech Center for Teaching and Learning — 2018-19

Selected for the inaugural cohort; designed professional-development curriculum and co-led orientation for new and returning teaching assistants and instructors.

Teaching Support | Duke University Global Executive MBA — 2016-17

Supported managerial economics, strategy, and global-markets instruction for an executive audience.

Graduate Teaching Assistant | Indiana University Bloomington — 2015-16

Supported undergraduate economics instruction before completing graduate study in economics.

Online Instructor | Campus / MTI College cohorts — 2022-23

Taught Principles of Microeconomics in Summer and Fall 2022 and Principles of Macroeconomics in Spring 2023.

LEARNING SYSTEMS AND QUANTITATIVE TRANSLATION

REUSABLE METHODS LIBRARIES

Builds modular curricula across statistics, inference, econometrics, microeconomics, and macroeconomics, with concepts separated from software-specific implementation.

EXECUTABLE QUANTITATIVE PRACTICE

Builds browser-native exercises, frozen teaching datasets, regression workflows, public-data labs, and familiar statistical output across Excel, Stata, R, Julia, Python, and SQL.

DIAGNOSTIC AND EXECUTIVE LEARNING DESIGN

Designs criterion-referenced diagnostics and decision-centered coaching in quantitative methods, finance, strategy, and marketing, with explicit boundaries on what an assessment can support.

VISUAL METHODS

Pictures of Inference, with Elizaveta Gonchar: book project in progress; Part One chapters 1-10 drafted as of August 14, 2026.

POLICY, TECHNOLOGY ASSESSMENT AND LEADERSHIP

- **National Network for Critical Technology Assessment (2023):** additional contributor to the semiconductor demonstration in *Securing America's Future: A Framework for Critical Technology Assessment*, an NSF-sponsored national report.
- **Professional service:** Ad hoc referee, *Journal of Economic Theory*.
- **Georgia Tech Graduate Student Government (2018-20):** Vice President for Campus Services and graduate senator; coauthored a policy white paper and represented graduate students in cross-campus planning; Senator of the Year, 2020.

EDUCATION

Ph.D., Economics, Georgia Institute of Technology | Minor: Quantitative Psychology — 2024
M.S., Geographic Information Science and Technology, Georgia Institute of Technology — 2022
M.S., Economics, Georgia Institute of Technology — 2019
M.A., Economics, Indiana University Bloomington — 2018
M.Sc., Specialized Economic Analysis, Barcelona School of Economics | Economics and Public Policy — 2015
B.A., Economics, University of North Carolina at Chapel Hill — 2014

METHODS AND TECHNICAL PRACTICE

Methods: research design; panel and fixed-effects models; Gelbach decomposition; event studies; quantile and median regression; clustered and bootstrap inference; measurement validation; geospatial, network, trade, and public-program analysis; data provenance; technical reporting and visualization.
Tools: R; Python; SQL (SQLite, DuckDB); Stata; Julia; QGIS/ArcGIS Pro; Git; LaTeX, Typst, and Quarto.

Selected work and current research: ihelfrich.github.io · Reproducible NMTC project: github.com/ihelfrich/us-nmtc-viewer