Elizaveta Gonchar

Economist | Geospatial Analyst

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Education

PhD in Economics — Georgia Institute of Technology (Atlanta, GA) — 4.0/4.0 **Expected: Aug. 2024**

Major Fields: International Trade, Development Economics
Minor Field: Quantitative Psychology
Advisor: Dr. Usha Nair-Reichert

MS in Geographic Information Science & Technology — Georgia Institute of Technology (Atlanta, GA) — 4.0/4.0 **May 2022**

Advisor: Dr. William J. Drummond

MS in Economics — Georgia Institute of Technology (Atlanta, GA) — 4.0/4.0 **May 2019**

MA in Economics — Indiana University (Bloomington, IN) — 3.53/4.0 **Jan. 2018**

Concentrations: Microeconomic Theory, International Trade

MSc in Economics — Barcelona Graduate School of Economics (Barcelona, Spain) **July 2015**

Masters of Science in Economics and Finance awarded by Universitat Pompeu Fabra.

BS in Economics — Arizona State University (Tempe, AZ) — 3.64/4.0 **Aug. 2014**

Minors: Mathematics, German
Certificate: International Business
Study Abroad: London School of Economics Summer Program (London, England) -- Summer Program 2013
-- Courses: Economics of European Integration, International Economics.
ASU Managerial Accounting (Florence, Italy) -- Summer 2012

Experience

Research Analyst — Carnegie Mellon University (Remote) **Aug. 2023 - Present**

Remote independent contractor the Block Center for Technology and Society as part of Georgia Tech's Graduate Internship Program.

Tasks: Provide analytical services for the Workforce Insights Tool on R.K. Mellon project at the CMU's Block Center. My role as a consultant consists of providing economics, analytics, and data visualization expertise to support the continued development of Workforce Insights Tool and other analytical resources for workforce supply chains.

Graduate Research Assistant — School of Public Policy - Georgia Institute of Technology (Atlanta, GA) **Oct. 2022 - Aug. 2023**

Assisting with NSF-funded project titled *"National Network for Critical Technology Assessment: A Pilot"* under Dr. Cassidy Sugimoto, collaborated with Dr. Christophe Combemale of Carnegie Mellon University.

Program objective: Develop assessment capabilities for critical technologies for U.S. competitiveness and present insights to U.S. legislators.

Personal contribution: Developing novel analytical methods and decision support toolkit for situational awareness and identification of skill supply and flow for every metropolitan labor market and state of the United States.

Application space of these methods: Include identifying and resolving workforce constraints on multibillion-dollar public and private investments in decarbonization and advanced manufacturing, currently supporting resource allocation and strategy for multiple U.S. federal executive branch agencies (DoD, NSF, U.S. Manufacturing Institutes), with further engagements being developed for other agencies, multiple large private firms and regional as well as national training organizations.

Materials developed: Drafted *"Workforce Insight Tool Methods Report"* outlining the methods and application developed.

Remote Consultant — University of Denver (Remote) **Feb. 2023**

Remote consultant for research fellow in the Sié Chéou-Kang Center and Oxfam America Joint Postdoctoral Fellowship Program.

Tasks: Collected and cleaned geographic data for mining companies in select African countries and provided corresponding maps.

Graduate Teaching Assistant — School of Economics - Georgia Institute of Technology (Atlanta, GA) **May - Dec. 2022**

Course Assisted: ECON 2101, ECON 2105, ECON 4060, ECON 6431

Graduate Research Assistant — School of Economics - Georgia Institute of Technology (Atlanta, GA) **Jan. - May 2022**

Individual research funded by COVID-19 Disruption Fund.

Graduate Teaching Assistant — School of Economics - Georgia Institute of Technology (Atlanta, GA) **Aug. 2017 - Dec. 2021**

Courses Taught: ECON 2101: The Global Economy (Online)
- 2 Semesters: Summer 2020 (53 students), Spring 2021 (73 students)

Courses Assisted:
- Undergraduate: ECON 2100, ECON 2101, ECON 2105, ECON 2106, ECON 3110, ECON 4350, ECON 4415, ECON 4803
- Graduate: ECON 6106, ECON 7012, ECON 7013

Graduate Assistant — School of Economics - Indiana University (Bloomington, IN) **Aug. 2015 - May 2017**

Courses Assisted:
- Undergraduate: ECON 201, ECON 202 (In-Person & Online), ECON 321

Skills

Analytical Software: Stata, ArcGIS Pro, ArcMap, ERDAS Imagine, QGIS, Matlab
Programming Languages: R, Python (Core, ArcPy), SQL
Foreign Languages: -- Native proficiency: English and Russian.
-- Limited working proficiency: German and Ukrainian.
Productivity Software: LaTeX, InDesign, Illustrator, ChatGPT

Honors & Awards

Apr. 2022	**Economics Graduate Student Instructor of the Year,** Center for Teaching and Learning (CTL)	Atlanta, GA
Nov. 2021	**GIS Day Map Competition Winner,** School of City and Regional Planning	--
Aug. 2017 - May 2021	**President's Fellowship Award,** Georgia Institute of Technology	--
Apr. 2021	**Senator of the Year,** Graduate Student Government Association	--
Apr. 2020	**Rookie Senator of the Year,** Graduate Student Government Association	--
Feb. 2014	**1st Place in Microeconomics, Macroeconomics, International Business,** Phi Beta Lambda Winter Leadership Conference	Tempe, AZ
Aug. 2013 - May 2014	**Recipient,** C.R. Krimminger Fund Scholarship	--
Summers 2012 & 2013	**Recipient,** W.P. Carey School of Business Study Abroad Scholarship	--

Extracurricular

Institutional Involvement

Oct. 2022 & Mar. 2023	**Application Reviewer,** President's Undergraduate Research Award (PURA) Salary Award	Atlanta, GA
FY 2022 & 2023	**Graduate Student Representative,** Mandatory Student Fee Advisory Committee	--
Sep. 2019 - Aug. 2021	**Graduate Senator,** Joint Finance Committee	--
FY 2021	**Graduate Student Member,** Joint Policy Response Committee	--
FY 2021	**Graduate Student Member,** Joint Campus Organizations Committee	--
FY 2020	**Graduate Student Representative,** Parking and Transportation Advisory Committee	--

Organizational Involvement

Omicron Delta Epsilon — Georgia Institute of Technology (Atlanta, GA) **Feb. 2019 - Present**

Leadership Position:
- Vice President of Events -- 2022

Graduate Student Government Association — Georgia Institute of Technology (Atlanta, GA) **Sep. 2019 - Sep. 2021**

Leadership Position:
- Senator in Graduate Student Senate -- Sep. 2019 - Sep. 2021

Phi Beta Lambda — Arizona State University (Tempe, AZ) **Jan. 2012 - May 2014**

Leadership Positions:
- President -- 2014
- Vice President of Communications -- 2013 - 2014
- Executive Vice President -- 2012 - 2013
- Director of Operations of Business Skills Day 25 -- 2013

ASU German Club — Arizona State University (Tempe, AZ) **Sep. 2011 - May 2014**

Leadership Position:
- Vice President of Events -- 2012 - 2013

ASU Russian Student Association — Arizona State University (Tempe, AZ) **Nov. 2011 - May 2013**

Leadership Position:
- President -- 2012 - 2013

Research

Reports

Securing America's Future: A Framework for Critical Technology Assessment

Contributing author in section "Integrated Summary: Semiconductors" of this report for the National Network for Critical Technology Assessment.

Working Papers

Build It and They Will Come? US Regional Labor Composition and Readiness to Meet Skill Demand Shocks from CHIPS and Science (Co-Authors: Christophe Combemale and Krishnan Ramayya)

Abstract: Expansionary industrial policies, such as the CHIPS and Science Act, are followed with notable surges in labor demand within the industries they target. In the case of the CHIPS and Science Act, industries such as semiconductor manufacturing experienced significant influxes in financial investment, with $231 billion being committed to Semiconductors & Electronics thus far. Recognizing the imperative to address such labor demand shocks, we propose a novel operational methodology. This methodology, informed by economics, assesses potential supply-demand skill discrepancies, and incorporates factors such as the intertemporal occupational rates of transition and regional wage distributions. By analyzing the skill compositions inherent to industry-related occupations, our approach provides a strategic advantage to policymakers and industry stakeholders, enabling them to identify specific U.S. locales with the requisite skill profiles and potential wage structures. Furthermore, the practical application of our methodology is embodied in the Workforce Insights Tool, which offers comprehensive labor insights. To substantiate the efficacy of our approach, we consider the semiconductor manufacturing industry in the context of the CHIPS and Science Act as a representative case study, exploring diverse strategies for the construction of skill profiles for industry-related occupations.

Effect of COVID-19 on Domestic Trade Flows: A Spatial Autoregressive Approach to Estimate the Response of Colombian Trucking Flows

Abstract: Interregional trade, particularly in the trucking sector, plays a crucial role in numerous economies and Colombia is no exception. The unprecedented shock of the COVID-19 pandemic had asymmetric effects on economies worldwide. In this study, I investigate and quantify the impact of international trade exposure by examining the changes in trade flow dynamics within the Colombian domestic trucking network in response to the spread of COVID-19 and the implementation of mitigation policies. Utilizing data on Colombian trucking from 2018 to 2021 and geospatial trade exposure characteristics, I construct a trade exposure measure employing a factor analysis approach. Thereafter, I implement a panel-data spatial autoregressive (SAR) model estimation to examine how trade exposure influenced the response of Colombian domestic trucking flows, measured as the value of goods traded between municipalities, to COVID-19 spread mitigation policies. My findings underscore the importance of accounting for spatial autocorrelations when analyzing trade flows. Furthermore, the results suggest that a municipality's trading role before the COVID-19 pandemic did indeed influence its vulnerability to the pandemic and the associated spread-mitigating policies.

Trade in the Spotlight: Enhancing Gravity Model Predictions with Nightlights- and Population-Weighted Distance Measures (Co-Author: Ian Helfrich)

Abstract: The distribution of consumers and producers across and within countries significantly influences the pattern of economic production. In this paper, we investigate the implications of spatial factors on gravity model estimates of trade by introducing a novel geodesic distance measure between countries, using nightlights-weighted and population-weighted centroids as endpoints for bilateral distance measures. Traditional gravity models of international trade have relied on time-invariant measures of bilateral distance between nations, including distance between national capitals, geographic centroids, and weighted centroids based on the largest population centers. By employing annual global population and nighttime lights density rasters to identify the central spatial tendency of producers and consumers, we estimate time-varying directional distance measures between origin-destination pairs. Our approach demonstrates increased accuracy and adaptability across various administrative boundaries, offering improved comparability across different research applications. The paper showcases the application of this method to the United States interstate commerce and global trade flows, highlighting the flexibility and reliability of our approach for a variety of empirical considerations.