Gulsah Gurkan

Applied Statistician | Psychometrician | Data Scientist

EDUCATION

2021

PhD, Measurement, Evaluation, Statistics, and Assessment
Boston College — Chestnut Hill, MA
Dissertation: "From OLS to Multilevel Multidimensional Mixture IRT: A Model Refinement Approach to Investigating Patterns of Relationships in PISA 2012 Data"

Committee: Henry Braun (chair), Matthias von Davier, Michael Martin, Zhushan Li

2011

Integrated BSc. & MSc., Teaching Physics
Bogazici University — Istanbul, Turkey
(Dual Degree in Physics and Secondary School Science & Mathematics Education)

PROFESSIONAL EXPERIENCE

Present | March 2021

Kaplan North America
Psychometrician — Remote

- Leading and executing projects to evaluate the efficacy of online test preparation products on academic and career outcomes.
- Building statistical models to analyze user behavior and communicating recommendations to product leaders for improvement.
- Providing expertise for research design, psychometric analysis, and advanced statistical modeling.
- Developing programming to automate and streamline data processing, analysis, reporting, and quality assurance procedures.

February 2021 | September 2020

Boston College
Graduate Statistical Consultant (Research Services) — Remote

- Offered consultations and tutorials to faculty and students from various departments to support their statistical computing and quantitative research.
- Provided expertise for selecting methodologies, planning and performing quantitative data analysis, data management, and statistical computing.

Graduate Assistant (Institutional Research and Planning)

- Analyzed data and reported findings from campus-wide surveys, which were used to monitor trends and provide feedback about various programs and campus issues.
- Developed programming to automate and streamline data cleaning and wrangling processes for annually published internal dashboards.

September 2020 | July 2020

uAspire
Chewning Research Fellow — Remote

- Designed and executed research projects to examine the organization's impact on college affordability/access and advance their learning for further program development and implementation.
- Employed data from multiple databases, conducted statistical analyses, and presented research findings to diverse audiences.

Contact

gurkangulsah@gmail.com
gulsah-gurkan.com
@Gulsah-G
@GulsahGurkan

Skills

Areas of Expertise:

Quantitative methodology
Advanced statistical modeling
Experimental design
Causal inference
Psychometrics
Survey design and research

Computing:

Statistical: R, SPSS Syntax, HLM, mdltm, LISREL, IRTPRO, WINSTEPS.
Databases: SQL, RMySQL, GitHub.
Survey platforms: Qualtrics, Google Forms.

*Made with the R package **pagedown**.*
Last updated on 2021-12-02.

Summer 2020

Educational Testing Service

Research Intern — Princeton, NJ

- Proposed project: The investigation of alternative RMSD statistics for international large-scale assessments. – *Canceled due to COVID-19.*

July 2020 | September 2015

Boston College

Research Assistant (Center for the Study of Testing, Evaluation, and Educational Policy) — Chestnut Hill, MA

- Conducted quasi-experimental studies employing both longitudinal and cross-sectional data from complex survey design studies.
- Analyzed data using various procedures such as generalized linear models, multilevel models, cluster analysis, and inverse probability weighting.
- Conducted psychometric analyses to develop and validate instruments measuring both cognitive and non-cognitive constructs.
- Automated data analysis procedures and created parameterized reports in R and R Markdown to generate documentation to be shared with stakeholders.
- Assisted with organizing a 2.5-day conference and interactive workshop on the challenges with measuring hard-to-measure constructs.

Summer 2019

Kaplan Test Prep

Psychometrician Intern — New York, NY

- Conducted an empirical simulation study and examined the feasibility and sustainability of automated test assembly methods to create user-tailored assessment products.
- Developed an R package for automated test assembly ('**ata**' available on CRAN R repository).

Summer 2018

New York City Department of Education

Data Analyst | Education Pioneers Summer Fellow — New York, NY

- Built a dashboard to communicate the impact of a professional development program to 45 superintendents and 9 Field Support Centers in New York City.
- Developed visuals in R to be shared externally, including using spatial data to geographically demonstrate the participation rates in NYC districts.
- Contributed to the team's ongoing work to refine the program logic model and design evaluation studies.

Summer 2017

Dublin City University

Research Associate — Dublin, Ireland

- Developed and validated a scale measuring students' physical and emotional well-being.
- Conducted psychometric analyses employing factor analytic approaches and Rasch modeling.

June 2015 | June 2012

Educational Volunteers Foundation of Turkey (TEGV)

Measurement and Evaluation Specialist — Istanbul, Turkey

- Coordinated measurement and evaluation studies to determine the effectiveness of more than 10 education programs across 30 cities in the underdeveloped provinces of Turkey.
- Developed measurement tools such as student questionnaires, interview and observation protocols.
- Collected, analyzed, and reported data for the purposes of organizational monitoring.
- Devised research briefs and reports on various aspects of education policy issues in Turkey.
- Represented the organization in "Volunteerism: Measuring Global Impact II" workshop that took place in June 2015 in Nairobi, Kenya.

TEACHING EXPERIENCE

February 2020

Fordham University

Workshop Host — New York, NY

- Automated Test Assembly in R (with Michael Chajewski)

May 2019 | September 2018

Boston College
Teaching Assistant
Chestnut Hill, MA

- Multivariate Statistics (Instructor: Zhushan Li)
- Psychometric Theory II – Item Response Theory (Instructor: Zhushan Li)

SOFTWARE / STATISTICAL PACKAGES

Gurkan, G., Chajewski, M. (2020). ata: Automated test assembly. (Version 1.1.0). R software package: The R Project for Statistical Computing.

SELECTED PUBLICATIONS AND CONFERENCE PRESENTATIONS

Gurkan, G., Benjamini, Y., Braun, H. (2021). Defensible inferences from a nested sequence of logistic regressions: a guide for the perplexed. *Large-scale Assessment in Education, 9*(16). doi: 10.1186/s40536-021-00111-7

Gurkan, G., von Davier, M., Braun, H. (2020). Accounting for measurement error and clustering in cross-cultural assessment data. *Presentation given at the (Virtual) International Meeting of the Psychometric Society*.

Gurkan, G., von Davier, M., Braun, H. (2020). On the cross-country heterogeneity of within-country bivariate relationships in international large-scale assessments: understanding, evaluating and adjusting for the contributions of measurement error and clustering. *Paper accepted to the 12th Conference of the International Test Commission, in Luxembourg City, Luxembourg*.

Gurkan, G., Chajewski, M. (2020). Exploring online assessment personalization via automated test assembly. *Paper accepted to the annual meeting of the National Council on Measurement in Education, in San Francisco, CA*.

Gurkan, G. (2019). A multilevel modeling analysis to investigate the factors affecting Turkish students' scientific literacy performance in PISA 2015. *Presentation given at the annual meeting of the New England Educational Research Organization, in Portsmouth, NH*.

Gurkan, G., Luna Bazaldua, D., & Braun, H. (2018). Testing dynamic complementarity in educational opportunities to accumulate relevant human capital. *Presentation given at the annual meeting of the National Council on Measurement in Education, in New York, NY*.

Gurkan, G. (2017). Psychometric properties of Learning to Teach for Social Justice Practices scale. *Presentation given at the annual meeting of the New England Educational Research Organization, in Portsmouth, NH*.