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
- Conducting research projects to evaluate the efficacy of test preparation products on student outcomes and communicating recommendations for improvement.
- Developing programming to automate data analysis and reporting procedures.
- Providing expertise for advanced statistical modeling procedures and techniques used in quasi-experimental data analysis.

September 2020 | July 2020 — **uAspire**
Chewning Research Fellow — Remote
- Worked on research projects to examine uAspire's impact on college affordability and access and advance their learning for further program development and implementation.
- Employed data from various sources such as NCES Common Core Data, conducted analyses, and presented research findings to diverse audiences.

Summer 2020 — **Educational Testing Service**
Research Intern — Princeton, NJ
- Project: The investigation of alternative RMSD statistics for international large-scale assessments. – *Canceled due to COVID-19.*

Summer 2019 — **Kaplan Test Prep**
Psychometrician Intern — New York, NY
- Conducted an empirical simulation study to evaluate feasibility and sustainability of automated test assembly methods to personalize online assessment products to each user's needs in preparing for The Medical College Admission Test.
- Developed an R package for automated test assembly ('**ata**' available on CRAN R repository).

Contact

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Skills

Areas of Expertise:

Quantitative methodology
Psychometrics
Advanced statistical modeling
Survey design and research
Evaluation 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 2021-10-19.

Summer 2018

New York City Department of Education
Data Analyst | Education Pioneers Summer Fellow — New York, NY
- Built an MS Excel dashboard to communicate the impact of the Showcase Schools program to 45 superintendents and 9 Field Support Centers in New York City.
- Contributed to the team's ongoing work to refine the program logic model and evaluation studies.

Summer 2017

Dublin City University
Research Associate — Dublin, Ireland
- Developed 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.

TEACHING EXPERIENCE

February 2020

Program of Psychometrics and Quantitative Psychology, Fordham University
Workshop Host — New York, NY
- Automated Test Assembly in R (with Michael Chajewski)

2019 | 2018

Department of Measurement, Evaluation, Statistics, and Assessment, Boston College
Teaching Assistant — Chestnut Hill, MA
- Multivariate Statistics (Instructor: Zhushan Li)
- Psychometric Theory II – Item Response Theory (Instructor: Zhushan Li)

RESEARCH EXPERIENCE

February 2021 | September 2020

Research Services, Boston College
Graduate Statistical Consultant — Remote
- Provided consultations and tutorials to faculty and students from various departments to support their statistical computing and quantitative research.
- Assisted with selecting methodologies, planning and performing statistical data analysis, data management, and statistical computing.

February 2021 | September 2020

Institutional Research and Planning, Boston College
Graduate Assistant — Remote
- Assisted with analysis and reporting of data from campus-wide surveys, which were used to monitor trends and provide feedback about various programs and campus issues.
- Automated data cleaning and wrangling processes for annually published internal dashboards.

2020 | 2016

Center for the Study of Testing, Evaluation, and Educational Policy, Boston College
Research Assistant — Chestnut Hill, MA
- Conducted quasi-experiemental 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, inverse probability weighting.
- Conducted psychometric analyses to develop and validate measurement instruments.
- Automated data analysis and reporting procedures 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.

2016 | 2015

Department of Measurement, Evaluation, Statistics, and Assessment, Boston College
Graduate Research Assistant Chestnut Hill, MA

- Developed and validated scales measuring both cognitive and non-cognitive constructs.
- Conducted psychometric analyses including differential item functioning to validate measurement instruments.
- Conducted interviews and think-alouds with participants of the studies.

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*.