

CURRICULUM VITAE

Amira Sherif Mohamed Elayouty

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Education:

Ph.D. in Statistics –degree awarded from University of Glasgow, Glasgow, United Kingdom, April 2017.

Thesis title: “Time and Frequency Domain Statistical Methods for High-frequency Time Series”

M.Sc. in Statistics -with highest distinction “Excellent”- from the Faculty of Economics and Political Science, Cairo University, July 2011.

Thesis title: “Spatial Analysis of Water Pollutants: A Case Study on the Nile River in Egypt”

B.Sc. in Statistics –with the distinction “Excellent with honours”- from the Faculty of Economics and Political Science, Cairo University, June 2007 (Major: Statistics / Minor: Economics) - English Section.

Post-Graduate Certificate of Academic Practice – with “Merit” from University of Glasgow, Glasgow, United Kingdom, September 2022.

Work Experience:

September 2017 - Present : Assistant Professor at the Department of Statistics, Faculty of Economics and Political Science, Cairo University.

September 2019 – December 2020 : Lecturer of Statistics at the School of Mathematics and Statistics, University of Glasgow.

September 2017 - July 2018 : Adjunct Faculty at the Department of Mathematics, the American University in Cairo (AUC) (part-time, 4.5 hrs/week)

September 2016 - April 2017 : Research Associate at the School of Mathematics and Statistics, University of Glasgow. (Part-time, 25hrs/week)

October 2013 - August 2017 : Graduate Teaching Assistant at the School of Mathematics and Statistics, University of Glasgow. (Part-time, about 25hrs/week)

October 2011 – September 2017 : Assistant Lecturer at the Department of Statistics, Faculty of Economics and Political Science, Cairo University.

September 2010 – December 2012: Teaching Assistant at the Department of Mathematics, the American University in Cairo. (Part-time, 12 hrs/week)

September 2007 – October 2011 : Teaching Assistant at the Department of Statistics, Faculty of Economics and Political Science, Cairo University.

Communities:

Elected as a Global representative for the International Environmetrics Society (TIES) for the period 2021-2025 and currently head of the new early-career researchers mentoring scheme committee for the society.

Awards and Funds:

November 2022: Best paper award for the paper titled “Climate change and child malnutrition in Egypt” presented at the 2nd Scientific FEPS-UNICEF conference on “Child and Adolescent Well-Being in Egypt” – Faculty of Economics and Political Science, Cairo, Egypt.

Summer 2020: Succeeded to secure an Undergraduate Research Bursary for a summary project student from the London Mathematical Society.

July 2016: Springer - TIES Best Student Presentation Award – for presenting my paper titled “Time-varying Dynamic Functional Principal Components” at the 26th Annual Conference of the International Environmetrics Society - TIES 2016, Edinburgh, UK; July 18-22, 2016.

July 2016: Cairo University award for international publication.

March 2014: Professor Nadia Makary Award, for international publication, for publishing the paper:

Abou-Ali, H., and A. El-Ayouti (2014), "Nile water pollution and technical efficiency of crop production in Egypt: an assessment using spatial and non-parametric modelling", Journal of Environmental and Ecological Statistics, vol. 21, issue 2, pp. 221-238.

January 2013: University of Glasgow senior Ph.D. studentship.

January 2012: John Wiley - TIES Best Student Presentation Award – for presenting my paper titled “Spatial Heterogeneity of Water Quality in the Nile River in Egypt” at the 22nd Annual Conference of the International Environmetrics Society - TIES 2012, Hyderabad, India; January 1-6, 2012.

January 2012: The World Bank grant to attend, participate and present a paper at the 22nd Annual Conference of the International Environmetrics Society - TIES 2012, Hyderabad, India; January 1-6, 2012.

Publications:

Elayouty, A. and Abou-Ali, H. (2023). Functional data analysis of the relationship between electricity consumption and climate change drivers”, *Journal of Applied Statistics*, 50 (10), 2267-2285.

Elayouty, A., Scott, M. and Miller, C. (2022). Time-Varying Functional Principal Components for Non-stationary EpCO₂ in Freshwater Systems, *Journal of Agriculture Biological and Environmental Statistics*.

Elayouty, A., Scott, M. and Miller, C. (2020). Discussion on “Functional Models for Time-Varying Random Objects” by Dubey & Müller. *Journal of the Royal Statistical Society - Series B*, in press.

Alva, I., Brooks, T., Campbell, J., Comte, A., Coppens, L., Ekins, P., ..., Elayouty, A., ... Haywood, L. (2021). Measuring progress: Environment and the SDGs. United Nations. <http://hdl.handle.net/10204/12059>

Elayouty, A., Scott, M. and Miller, C. (2021). Reconstruction of sparsely sampled functional time series using frequency domain functional principal components. Proceedings of the 50th Scientific Meeting of the Italian Statistical Society, Pisa, Italy.

Elayouty, A. (2019). Variograms for Functional Data. In *Wiley StatsRef: Statistics Reference* (eds Online 2014–2019 John Wiley & Sons, Ltd.) DOI: 10.1002/9781118445112.stat08256

Elayouty, A., Scott, M. and Miller, C. (2016). Discussion on “Should we sample a time series more frequently?: Decision support via multirate spectrum estimation” by Nason et al.. *Journal of the Royal Statistical Society - Series A*, vol. 180, issue 2, pp 353-407.

Elayouty, A., Scott, M., Miller, C., Waldron, S. and Villoria, M. F. (2016). Challenges in modeling detailed and complex environmental data sets: a case study modeling the excess partial pressure of fluvial CO₂, *Journal of Environmental and Ecological Statistics*, vol. 23, issue 1, pp 65–87.

Abou-Ali, H., and El-Ayouti, A. (2014). Nile water pollution and technical efficiency of crop production in Egypt: an assessment using spatial and non-parametric modelling, *Journal of Environmental and Ecological Statistics*, vol. 21, issue 2, pp. 221-238.

El-Ayouti, A., and Abou-Ali, H. (2013). Spatial Heterogeneity of the Nile Water Quality in Egypt, *Journal of Environmental Statistics*, vol. 4, issue 8.

Abou-Ali, H., and El-Ayouti, A. (2012). Nile water pollution and technical efficiency of crop production in Egypt: Assessment Using spatial and non-parametric modelling. Proceedings of the 24th Annual Conference on Statistics and Modelling in Human and Social Sciences, Faculty of Economics and Political Science, Cairo University.

Working papers:

Elayouty, A., Abou-Ali, H. and Hawash, R. (2022). Does climate change affect child malnutrition in the Nile Basin, Economic Research Forum Working paper No. 1613

Elayouty, A. and Abou-Ali, H. (2021). Exploring the relationship between electricity consumption and drivers of climate change: a functional data analysis approach, Economic Research Forum Working paper No.1456.

Abou-Ali, H., and El-Ayouti, A. (2012), Nile water heterogeneity in Egypt: Assessment using spatial analysis, Information and Decision Support Center Working Paper No.29.

Conferences:

Elayouty, A. Shawky, S. and Saad, A. N. ``A spatio-temporal statistical downscaling model for combining spatially misaligned maximum temperature data using R-INLA” THE 30th ANNUAL CONFERENCE OF THE INTERNATIONAL ENVIRONMETRICS SOCIETY - TIES 2023, Ottawa, Canada, July 24-29, 2023. (Contributed Talk)

Elkady, A., Saad, A. N. and Elayouty, A. ``Multi-scale Geographically Weighted Quantile Regression” THE 30th ANNUAL CONFERENCE OF THE INTERNATIONAL ENVIRONMETRICS SOCIETY - TIES 2023, Ottawa, Canada, July 24-29, 2023. (Contributed Talk)

Elayouty, A., Abou-Ali, H. and Hawash, R. ``Climate change and child malnutrition in Egypt” THE 2nd SCIENTIFIC FEPS-UNICEF CONFERENCE on "Child and Adolescent Well-Being in Egypt” – Faculty of Economics and Political Science, Cairo, Egypt, November 3, 2022. (Contributed Talk)

Wan, Y. and A. Elayouty “Estimation of reference growth charts for children in Egypt using quantile regression methods” THE ROYAL STATISTICAL SOCIETY CONFERENCE 2021, Manchester, United Kingdom, September 6-9, 2021. (Poster Presentation)

Elayouty, A., M. Scott, C. Miller and S. Waldron “Functional principal component analysis for non-stationary dynamic time series” INTERNATIONAL WORKSHOP ON STATISTICAL MODELLING, Bristol, United Kingdom; July 15-20, 2018. (Contributed Talk)

Elayouty, A., M. Scott, C. Miller and S. Waldron “Functional principal component analysis for non-stationary dynamic time series - with an application to high-frequency hydrological data” THE 49th SCIENTIFIC MEETING OF THE ITALIAN STATISTICAL SOCIETY, Palermo, Italy, June 20-22, 2018. (Invited Talk)

Participated to the discussions in THE CONFERENCE OF APPLYING QUANTITATIVE ANALYSIS TO DEVELOPMENT ISSUES, Bibliotheca Alexandria, Egypt, February, 18 -19, 2018.

Elayouty, A., M. Scott, C. Miller and S. Waldron “Testing Stationarity of Functional Time Series” THE 27th ANNUAL CONFERENCE OF THE INTERNATIONAL ENVIRONMETRICS SOCIETY - TIES 2017, Bergamo, Italy; July 24-26, 2017. (Invited Talk)

Elayouty, A., M. Scott, C. Miller and S. Waldron “Time-varying Dynamic Functional Principal Components” THE 26th ANNUAL CONFERENCE OF THE INTERNATIONAL ENVIRONMETRICS SOCIETY - TIES 2016, Edinburgh, UK; July 18-22, 2016. (Invited Talk)

Elayouty, A., M. Scott, C. Miller and S. Waldron “Patterns and Processes Revealed in High-frequency Environmental Data” THE ITALIAN ENVIRONMETRICIANS GROUP CONFERENCE (GRASPA), Bari, Italy; June 18-22, 2015. (Invited Talk)

Elayouty, A., M. Scott, C. Miller, S. Waldron, and M. F. Villoria, "Analyzing Environmental Sensor High-Frequency Data", SOLVING BIG DATA CHALLENGES FROM MODERN SCIENCE THROUGH STATISTICAL MODELLING EVENT, ICMS, Edinburgh, UK, May 5-8, 2015. (Poster presentation)

Elayouty, A., M. Scott, C. Miller, S. Waldron, and M. F. Villoria, "Analyzing Environmental Sensor High-Frequency Data", OPEN FOR BUSINESS: DATA VISUALIZATION, ANALYTICS AND NETWORKING FOR SENSOR SYSTEMS, Glasgow, UK, May 29, 2015. (Poster presentation)

Elayouty, A., M. Scott, C. Miller, S. Waldron, and M. F. Villoria, "Visualisation and Modelling of Environmental Sensor Time Series", INTERNATIONAL WORKSHOP ON STATISTICAL MODELLING, Göttingen, Germany, July 14-18, 2014. (Poster presentation)

Attended THE 37th ANNUAL RESEARCH STUDENTS' CONFERENCE IN PROBABILITY AND STATISTICS, Nottingham, United Kingdom, April 28 - May 1, 2013.

Abou-Ali, H., and A. El-Ayouti, " Nile water pollution and technical efficiency of crop production in Egypt: an assessment using spatial and non-parametric modelling", STATISTICAL WEEK 2012, Vienna, Austria, September 18-21, 2012. (Contributed talk)

Abou-Ali, H., and A. El-Ayouti, " Nile water pollution and technical efficiency of crop production in Egypt: an assessment using spatial and non-parametric modelling", THE 24th ANNUAL CONFERENCE ON STATISTICS AND MODELLING IN HUMAN AND SOCIAL SCIENCES, Cairo University, Egypt, March 27-28, 2012. (Contributed talk)

El-Ayouti, A., and H. Abou-Ali, "Spatial Heterogeneity of the Nile Water Quality in Egypt", THE 22nd ANNUAL CONFERENCE OF THE INTERNATIONAL ENVIRONMENTAL SOCIETY - TIES 2012, Hyderabad, India, January 1-6, 2012. (Contributed paper)

Workshops:

Designed and presented a short-course titled "Functional Data Analysis and its applications" over the period 17-18 March, 2023 as part of the PhD program in Statistics, University of Bergamo, Italy.

Designed and presented two sessions in a short-course titled "Data Science and its Applications" over the period 24-25 March, 2019 as part of the 31st ANNUAL CONFERENCE ON STATISTICS AND MODELLING IN HUMAN AND SOCIAL SCIENCES, Cairo University, Egypt.

Designed and presented a short-course titled "Functional Data Analysis and its applications" over the period 1-2 April, 2018 as part of the 30th ANNUAL CONFERENCE ON STATISTICS AND MODELLING IN HUMAN AND SOCIAL SCIENCES, Cairo University, Egypt.

Designed and presented a workshop titled "Data Visualisation in R" to professional and academic statisticians over the period 21-22 August, 2017.

Language Skills:

Language	Competence	Skill
Arabic	Fluent	Mother tongue.
English	Fluent	Writing, speaking and listening.
French	Very good	Writing, speaking and listening.
Italian	Fair	Speaking and listening.

Computer skills:

Software	Competency	Usage
R	Excellent	Constantly
Latex	Excellent	Constantly
MS Office	Excellent	Constantly