Abel Guada Azze

Last update on July, 2025

Education

2018-2023 **PhD in Mathematical Engineering**, *Carlos III University of Madrid*.
PhD thesis: "Optimal Stopping of Gauss-Markov processes", supervised by professors Bernardo D'Auria and Eduardo García Portugués.

2016–2018 **MSc in Mathematical Engineering**, *Carlos III University of Madrid*.
MSc thesis: "Inferring the optimal stopping boundary for a Brownian bridge", supervised by professors Bernardo D'Auria and Eduardo García Portugués.

2010–2014 **BSc in Mathematics**, *University of Havana*.
BSc thesis: "Selección del ancho de banda en estimación por Kernel para colas pesadas", supervised by professor Luis A. Salomón.

Positions

2023+ **Associate Professor**, *Department of Quantitative Methods*, CUNEF University.

2023-2023 **Graduate Teaching Assistant**, *Department of Statistics*, Carlos III University of Madrid.

2018-2023 **Research Assistant**, *Department of Statistics*, Carlos III University of Madrid.

2022-2022 **Visiting PhD researcher**, *Department of Economics*, Università "G. d'Annunzio" Chieti-Pescara.

2014-2016 **Graduate Teaching Assistant**, *Department of Mathematics*, Technological University of Havana José Antonio Echeverría.

Awards

2014 **Roberto Peña award**, *conceded by the Cuban Society of Mathematics and Computer Science for the work "Estimación por Kernel para Colas Pesadas"*.

2014 **Gran Premio**, *conceded by the Department of Mathematics and Computer Science of the University of Havana for the work "Estimación por Kernel para Colas Pesadas"*.
Top of my year in the *Jornada Científica Estudiantil* 2014 of the University of Havana.

2013 **Relevante 3ro Matemática Aplicada**, *conceded by the Department of Mathematics and Computer Science of the University of Havana for the work "Estimación por Kernel en muestras pequeñas"*.
Top of my year in the category of applied mathematics in the *Jornada Científica Estudiantil 2013* of the University of Havana.

Research projects and grants

Scholarships

2018-2022 **Scholarship for PhD studies**, *given by Carlos III University of Madrid*.

2016-2018 **Scholarship for MSc studies**, *given by Carlos III University of Madrid*.

Publications

Working papers

2025 Azze A, D'Auria B. On the optimal stopping of Gauss-Markov bridges with random pinning points. arXiv. `https://doi.org/10.48550/arXiv.2505.03636`

Refereed papers

2025 Azze A, D'Auria B, García-Portugués E. Optimal stopping of Gauss–Markov bridges. Advances in Applied Probability. 2025;57(1):1-34. `https://doi.org/10.1017/apr.2024.21`

2024 Azze, A., D'Amico, G., D'Auria, B. et al. Modelling a storage system of a wind farm with a ramp-rate limitation: a semi-Markov modulated Brownian bridge approach. Ann Oper Res 345, 39–57 (2025). `https://doi.org/10.1007/s10479-024-06236-6`

2024 Azze, Abel., D'Auria, Bernardo., and García–Portugués, Eduardo. Optimal exercise of American options under time-dependent Ornstein–Uhlenbeck processes. Stochastics. 2024; 96(1), 921-946. `https://doi.org/10.1080/17442508.2024.2325402`

2024 Azze, Abel., D'Auria, Bernardo., and García-Portugués, Eduardo. Optimal stopping of an Ornstein–Uhlenbeck bridge. Stochastic Processes and their Applications. 2024; 172, Art. 104342. `https://doi.org/10.1016/j.spa.2024.104342`

2020 D'Auria, Bernardo and García-Portugués, Eduardo and Guada, Abel. Discounted optimal stopping of a Brownian bridge, with application to American options under pinning. Mathematics. 2020; 8(7):1159. `doi:10.3390/math8071159`

Preprints

Thesis Advisor

Bachelor

MSc

2024–2025 **MSc in Big Data Analytics**, *Universidad Carlos III de Madrid*.
Title: Optimal stopping of a Brownian bridge with a random pinning point
Authors: Manuel Emilio Baliño Vilar
Supervisors: Eduardo García Portugués and Abel Guada Azze.

2023–2024 **MSc en Ciencia de Datos**, *CUNEF Universidad*.
Title: Perfilado de clientes
Authors: Guzmán Muñoz Revuelta and Gaspar Cólogan Barajas
Supervisors: Abel Guada Azze (academic supervision), and Pablo Jimenez Ruiz and Pablo Corral Vila (institutional supervision).

Teaching

Theory

2024/2025 **Quantitative Methos for Humanities**, *Bachelor in Philosophy, Politics, and Economics*, CUNEF Univsersidad.

2023/2024 **Econometría**, *Doble Grado en Administración y Dirección de Empresas e Ingeniería Informática*, CUNEF Univsersidad.

2024/2025 **Mathematics**, *Bachelor in Philosophy, Politics, and Economics*, CUNEF Univsersidad.

2024/2025 **Data Collection and Processing**, *Double Bachelor in Business Administration and Law*, CUNEF Universidad.

2023/2024 **Estadística Empresarial II**, *Bachelor in Business Administration*, CUNEF Centro Adscrito.

2023/2024 **Econometría**, *Doble Grado en Administración y Dirección de Empresas e Ingeniería Informática*, CUNEF Univsersidad.

2023/2024 **Econometrics**, *Double Bachelor in Business Administration and Law*, CUNEF Univsersidad.

2023/2024 **Data Collection and Processing**, *Double Bachelor in Business Administration and Law*, CUNEF Universidad.

2023/2024 **Mathematics**, *Bachelor in Philosophy, Politics, and Economics*, CUNEF Univsersidad.

2022/2023 **Analysis of dynamic data**, *Bachelor in Finance and Accounting*, Carlos III University of Madrid.

2022/2023 **Statistical methods for social sciences: prevision techniques**, *Bachelor in International Studies and Business Administration*, Carlos III University of Madrid.

Practices

2022/2023 **Statistical methods for social sciences: prevision techniques**, *Bachelor in International Studies and Business Administration*, Carlos III University of Madrid.

2022/2023 **Statistical Learning**, *Bachelor in Data Science and Engineering*, Carlos III University of Madrid.

2021/2022 **Statistics for social sciences I**, *Bachelor in Political Science*, Carlos III University of Madrid.

2021/2022 **Probability and Data Analysis**, *Bachelor in Data Science and Engineering*, Carlos III University of Madrid.

2020/2021 **Procesos estocásticos**, *Bachelor in Statistics and Business*, Carlos III University of Madrid.

2020/2021 **Procesos estocásticos**, *Bachelor in Statistics and Business*, Carlos III University of Madrid.

2019/2020 **Procesos estocásticos**, *Bachelor in Statistics and Business*, Carlos III University of Madrid.

2018/2019 **Estadística**, *Bachelor in Electric Engineering*, Carlos III University of Madrid.

2018/2019 **Statistics**, *Bachelor in Communication Systems Engineering*, Carlos III University of Madrid.

2018/2019 **Statistics**, *Bachelor in Automatic and Industrial Engineering*, Carlos III University of Madrid.

2015/2016 **Probabilidades y estadística**, *Bachelor in Civil Engineering*, Technological University of Havana José Antonio Echeverría.

2015/2016 **Matemática III para arquitectos**, *Bachelor in Architecture*, Technological University of Havana José Antonio Echeverría.

2014/2015 **Probabilidades y estadística**, *Bachelor in Civil Engineering*, Technological University of Havana José Antonio Echeverría.

2014/2015 **Matemática I**, *Bachelor in Civil Engineering*, Technological University of Havana José Antonio Echeverría.

Seminar contributions (speaker underlined)

26/03/2025 **"Optimally Stopping a Gauss-Markov process with random terminal value"**, *Probability Seminar*, Department of Mathematics, University of Manchester, UK., <u>Abel Azze</u>, Bernardo D'Auria.

20/12/2023 **"Optimal stopping of Gauss-Markov processes"**, *Quantitative Methods job market seminar*, Department of Quantitative Methods, CUNEF Universidad, Spain., <u>Abel Azze</u>, Bernardo D'Auria.

Conference contributions (speaker underlined)

Invited talks

12/09/2025 – 14/09/2025 **"Optimal stopping of Gauss-Markov processes with random terminal value "**, *Fields-CFI Conference on Optimal Stopping and Its Applications in Finance and Insurance*, The Fields Institute, Toronto, Canada, <u>Abel Azze</u>, Bernardo D'Auria.

Contributed talks

23/09/2024 – 25/09/2024 **"Optimal stopping of Gauss-Markov bridges"**, *4th International Workshop on Stochastic Processes and their Applications*, Universidad de Zaragoza, Zaragoza, <u>Abel Azze</u>, Bernardo D'Auria, and Eduardo García-Portugués.

08/07/2024 – 12/07/2024 **"Optimal stopping of Gauss-Markov bridges with applications to American options"**, *12th Bachelier World Congress of the Bachelier Finance Society*, FGV EMAp, Rio de Janeiro, <u>Abel Azze</u>, Bernardo D'Auria, and Eduardo García-Portugués.

13/11/2023 – 16/11/2023 **"Optimal stopping of Gauss–Markov bridge"**, *Bringing Young Mathematicians Together (BYMAT) 2023*, ICMAT, Madrid, <u>Abel Azze</u>. Bernardo D'Auria, and Eduardo García-Portugués.

13/01/2020 – 17/01/2020 **"Optimal exercise for American options under pinning effect"**, *Theory and Practice of Optimal Stopping and Free Boundary Problems*, University of Leeds, Bernardo D'Auria, Eduardo García-Portugués, and Abel Guada.

05/06/2019 – 07/06/2019 **"Optimal exercise for American options under stock pinning"**, *2nd Spanish Young Statisticians and Operational Researchers Meeting (SYSORM 2019)*, Bernardo D'Auria, Eduardo García-Portugués, and Abel Guada-Azze.

04/04/2018 – 06/04/2018 **"Optimal stopping and Volterra type equations: application to the Brownian Bridge"**, *Mathematical and Statistical Methods for Actuarial Sciences and Finance (MAF 2018)*, Bernardo D'Auria, Eduardo García-Portugués, and Abel Guada-Azze.

2014 **"Bandwith selection for heavy-tailed distributions"**, *XXIV Encuentro de Estadísticos Cuba-México*, Havana, Cuba, Luis A. Salomón and Abel Guada Azze.

2014 **"Estimación por Kernel para Colas Pesadas"**, *Jornada Científica Estudiantil 2014 of the University of Havana*, Luis A. Salomón and Abel Guada Azze.

2013 **"Estimación por Kernel en muestras pequeñas"**, *Jornada Científica Estudiantil 2013 of the University of Havana*, Luis A. Salomón and Abel Guada Azze.

Posters

2018 **"Inferring the optimal stopping boundary for a Brownian bridge"**, *Statistical Methods for Big Data (SMBD 2018)*, Bernardo D'Auria, Eduardo García-Portugués, and Abel Guada-Azze.

Referee

2024 Statistics and Probability Letters

Computer skills

Interpreted languages: R, Mathematica, MATLAB, Python

Compiled languages: TeX

Other softwares: RStudio, TeXstudio, GitHub, Mendeley, Zotero, JabRef

Languages

Spanish **Native**

English **Advanced (C1)** *Qualification: Cambridge English Level 2 Certificate in ESOL International*