# Curriculum Vitae

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Assistant Professor in Actuarial and Financial Mathematics,
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## Research Interests

- Optimal control problems.
- Financial Mathematics.
- Actuarial Mathematics.
- Stochastic analysis with financial and actuarial applications.

## Education

- PhD in Actuarial and Financial Mathematics, The University of Manchester, Manchester, United Kingdom, 2020.

- MSc in Financial Mathematics, The University of Manchester, Manchester, United Kingdom, 2014.

- MSc in Mathematics (Functional Analysis), King Saud University, Riyadh, Saudi Arabia, 2011.

- BSc in Mathematics, King Saud University, Riyadh, Saudi Arabia.

## Awards and Grants

- Scholarship from King Saud University August 2012-December 2020.

- Nag Prize, MSc in Financial Mathematics, the University of Manchester, U.K. 2014.

- Second class honors, MSc in Mathematics, Functional Analysis, King Saud University, Riyadh, Saudi Arabia, 2011.

- First class honors, BSc in Mathematics, King Saud University, Riyadh.

## Current Academic Position

- Assistant Professor in Actuarial and Financial Mathematics Bachelor's degree Program (AFMP), Department of Mathematics, King Saud University, 2021-present.

## Previous Academic Positions

- Lecturer in Mathematics, King Saud University 2017- 2021.
- Teacher assistant for the subject "Stochastic control with applications to finance", at the University of Manchester, U.K. in 2017 and 2018.
- Teacher assistant in Mathematics, at King Saud University, from 2009 - 2017.

## Experiences

- Member of the judging panel for talented students at the College of Science, KSU, November 2024-present.
- Member of the committee organizing the scientific workshop titled: "Actuarial studies' impact on pension investment management", 8 May 2024, for the Financial and Actuarial Studies Research Chair (FASRC), KSU.
- Member of teaching assistants' appointment committee, in the Mathematics Department, KSU, 2023.
- Supervising students academically during their field training course in different companies in the financial and insurance sectors.
- Representative of AFMP of KSU at the American Society of Actuaries (SOA), 2023-present.
- Member of the advisory committee for the Mathematics Program at Princess Nourah bint Abdulrahman University, 2023.
- Member of the committee organizing the scientific workshop titled:

"The insurance sector in KSA and some future challenges", 9th February 2023, for FASRC, KSU.

- Member of AFMP committee, Mathematics Department, KSU, 2021-present.

- Coordinator of academic accreditation of AFMP in female students' branch, 2021- present.

- Member of Academic Affairs committee for the AFMP, Mathematics Department, KSU, 2021- present.

- Member in Financial and Actuarial Studies Research Chair (FASRC), KSU, 2021- present.

- Chairperson of activities and specialized training courses committee in FASRC, KSU, 2021-2023.

- Member of organizing FASRC participation in the "6th Saudi Insurance Symposium", September 2022.

- Collaboration with Education & Training Evaluation Commission, in marking financial literacy international Exam "PISA", Riyadh, 2021-2022.

## Conferences, Workshops, and Training courses

- Attended the SOA symposium themed 'Expanding Actuarial Horizons: Mapping Risk & Opportunity' in Riyadh, 23-25 November 2024.
- Participated in 'Fair Insurance Pricing Workshop', University of Liverpool, 14th June 2024, with a talk titled 'Quantities of interest for risk processes with tax'.
- Delivering an educational lecture on the Actuarial and Financial Mathematics major to high school students in Riyadh, on 24 June 2024.
- Chairperson of a talk titled 'Benefits and Advantages of UCAP-List for Actuarial and Financial Mathematics Program' presented by SOA, 15 November 2023, KSU.
- Attended the First SOA regional symposium in Riyadh, 18-20 November 2023.

- Participation with talk in "ICES2023, International Conference & Exhibition for Science", KSU.
- Chairperson in FASRC, a seminar titled "The insurance sector in KSA and some future challenges", 9th February 2023.
- Obtaining a certificate of completion for five training courses, from the deanship of skills development, KSU, aimed at preparing and developing new faculty members, 2022.
- Attending eight training courses, at the Deanship of Skills Development, KSU, as part of the preparation of quality and academic accreditation practitioners, in 2022.
- Attended Risk Institute Spring School, The University of Liverpool, U.K. 21-24 March 2018.
- Participation in paper and talk, "41st Research student's conference in Probability and Statistics", The University of Sheffield, U.K. 24-27th July 2018.
- Participation in paper and talk, "Probability in the Northeast (PINE)", the University of Manchester, U.K. 12th September 2018.
- Attended Easter school on quantification and management of risk, The University of Liverpool, U.K. 18-21 April 2017.

## Publications

- "*Generalized Geometric BSDEs, Quadratic BSDEs and Applications*", December 2024, with Mhamed Eddahbi, *preprint*.

- "*Chaotic Dynamics in Financial System: A Study with Variable-Order Fractal-Fractional Derivatives*", November 2024, with Souhail Chebbi and Krunal Kachhia, *preprint*.

- "*Stochastic optimal control of Levy tax processes with bailouts*", August 2024, with Loeffen, R.L. and Watson, A., *preprint*.
  https://doi.org/10.48550/arXiv.2408.16385

- "*The equivalence of two tax processes*". Insurance: Mathematics and Economics 2020, Vol. 90, 1-6, with Loeffen, R.L. and Watson, A.
  https://doi.org/10.1016/j.insmatheco.2019.10.002

- "Optimal control of taxation for spectrally negative Levy processes". PhD Thesis, The University of Manchester, 2020.

- "Perpetual convertible bonds with credit risk". MSc dissertation, The University of Manchester, 2014.

- "Quasi-linearity and pseudo-linearity problem for C*-algebras". MSc dissertation, King Saud University, 2011.