MAHMOUD SAAD MEHANY MAHMOUD

Studying a PhD in Pure and Computational Mathematics- College of Science- Shanghai University, Sep. 2019- Jun. 2022.
Teaching Assistant, Mathematics Department, Faculty of Education, Ain Shams University 2013-2018.
Current Job,
Assistant Professor, Department of Mathematics, Faculty of Education, Ain Shams University,
Since Aug. 2022 upto date（Full time）
Email: mahmoudmahany2002@edu.asu.edu.eg
Assistant Professor, School of Business Informatics, Egypt University of Informatics, New Cairo, Egypt
Since Feb. 2026 upto date（part timer）
Email: Mahmoud.mahany@eui.edu.eg
Assistant Professor, School of Engineering and Technology,
The Knowledge Hub Universities
NOVA Universities Lisbon in Egypt
Cairo Campus,
Since Sep. 2024 up to date（part-time）
Email: Mahmoud.saad@cairo.unl.pt
Assistant Professor, School of Mathematics and Computer Sciences,
University of Prince Edward Island
Cairo Campus, Universities of Canada in Egypt
Feb. 2024-Winter 2023-2024-（part-time）
Email: Mahmoud.mehany@uofcanada.edu.eg

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EDUCATION

Doctor's Degrees of Science, Pure Mathematics

Shanghai University, Faculty of Science.
Mathematics Department. **2022, Shanghai, China**

Thesis Title: "Research on Solutions of Several Kinds of Sylvester-Like Quaternion Tensor and Matrix Equations".

Supervisor: Prof. Dr. Qing-Wen Wang.

Relevant Coursework: Matrix theory, Groups, Representation of groups and algebras, Higher matrix algebra, Commutative algebra, Classical groups, Lie groups, Matrix equations, Numerical Analysis, Matrix analysis, Quantum computing.

Cumulative Grade: CGPA: 3.9/4

Current Research Interests: Matrix decomposition; Matrix equations; tensor decomposition; Linear Algebra and Matrix Theory; Numerical Linear Algebra; Matrix theory over the quaternion algebra; Numerical Linear Algebra; Tensor theory over the quaternion algebra.

Courses we have taught to undergraduate and graduate students:

Abstract Algebra, Logic, Discrete Math (Combinatorics) , Group Theory(1,2), Linear Algebra, Matrix Theory, Mat-Lab, Rings Theory, Representation Theory, Calculus I, II, III, Graph Theory, Cybersecurity, Differentiation and Integration, Numerical Analysis, Operation Research, Game Theory, Differential Equations (Linear and non-linear), Geometry(1,2), Measure Theory, Algebraic Geometry, Fuzzy and Rough Systems, Vector Analysis, Topological Spaces, Real Analysis, Function Analysis, Complex Analysis, Probability, Statistics..

Participated in scientific research projects

1- Algebraic equations on noncommutative algebras and their applications (grant no. 11571220).
2- Tensor Equations on quaternion algebra and their applications (grant no. 11971294).

Selected Published SCI Papers

[1] **Mehany, M.S.**, Wang, QW. & Gao, J. Solvability conditions and the general solution to a system of quaternion tensor equations with applications. *Comp. Appl. Math.* **45**, 198 (2026). https://doi.org/10.1007/s40314-025-03581-5

[2] Bayoumi, A.M., Halawa, H.R. and **Mehany, M.S.**, 2026. A finite iterative algorithm for solving a single-variable quaternion system of matrix equations. *Journal of Vibration and Control*, p.10775463261431152.

[3] Bayoumi, A.M. and **Mehany, M.S.**, 2026. A Finite Iterative Algorithm for Calculating a Hermitian Solution to a Single-Variable Generalized Quaternion Matrix Equation. *Mathematical Methods in the Applied Sciences*.

[4]**Mahany, M. S.,** Halawa, H. R., Rizkalla, R. R., & Bayoumi, A. M. E. (2026). Numerical algorithms for solving two-sided *k*-conjugate quaternion matrix equation with Hermitian *R*-conjugate solution. Accepted in *International Journal of Computer Mathematics: Computer Systems Theory*.

[5]**Mehany, M.S.**, 2025. An Analysis to Some Systems of Matrix Equations with ${\phi}$-Hermitian Solutions for Some Nonstandard Involution ${\phi}$ Over the Real Quaternion Algebra. Iranian Journal of Science, pp.1-15.

[6] **Mahmoud S. Mehany**, Faizah D. Alanazi. An η-Hermitian solution to a two-sided matrix equation and a system of matrix equations over the skew-field of quaternions[J]. AIMS Mathematics, 2025, 10(4): 7684-7705. doi: 10.3934/math.2025352

[7] Bayoumi, A.M., **Mehany, M.S.** and Halawa, H.R., 2025. A finite iterative algorithm for generalized quaternion matrix equation with Hamiltonian solution. *Engineering Computations*.

[8] **Mehany,M.S.**, Wang, Q. Liu, L. A System of Sylvester-like Quaternion Tensor Equations with an Application. Front. Math (2024). https://doi.org/10.1007/s11464-021-0389-8.

[9] **M.S. Mehany**, M.H. Elbaroudy, M.A. Kamal, Modules closed full large extensions of cyclic submodules are summands. Ital. J. Pure Appl. Math. 2020, 43, 671–679.

[10] **M.S. Mehany**, Q.W. Wang, Three symmetrical systems of coupled Sylvester-like quaternion matrix equations, Symmetry, 2022, 14, 550.

[11] M.Y. Xie, Q.W. Wang, Z.H. He, **M.S. Mehany**, A system of Sylvester-type quaternion matrix equations with ten variables, Acta Mathematica Sinica, English Series 38.8 (2022): 1399-1420. (Chinese Mathematical Society T1)

[12] Y.F. Xu, Q.W. Wang, L.S. Liu, **M.S. Mehany**, A constrained system of matrix equations, Comput. Appl. Math., 2022. https://doi.org/10.1007/s40314-022018738.

[13] L.S. Liu, Q.W. Wang, **M.S. Mehany**, A Sylvester-type matrix equation with an application over Hamilton quaternions, Mathematics, 2022.

[14] **Mehany, M.S.,** EL-Arabey, A.E., Kamal, M.A., EL-Baroudy, M.H. and Ammar, A.Y., ON GENERALIZATION OF INJECTIVE MODULES. *Journal: JOURNAL OF ADVANCES IN MATHEMATICS*, *10*(3).

[15] Q.W. Wang, **M.S. Mehany**, A new generalization of a system of two-sided coupled Sylvester-like quaternion tensor equations, arXiv:2205.14810 (2022).

[16] **M.S. Mehany,** A novel of two-sided matrix equation with \phi-Hermitian solution for some nonstandard involution over the real algebra of quaternions with an application. **Under Review**

[17] **Mehany, M.S.,** Bayoumi, A.M., Halawa, H.R. A finite iterative algorithm for a significant linear matrix equation over the skew-field of quaternions with an application. **Under Review**

Invited Talk/ Conferences

1. (Invited Talk) SIAM Conference on Applied Linear Algebra, New Orleans, May 17-21, 2021.

2. (Invited Talk) 2021 The 5th China-Brazil Symposium on Applied and Computational Mathematics Algebra (LA21), Songshan Lake, Dongguan, China, Aug 23, 2021.

Master of Pure Mathematics **2016**

Ain Shams University, Faculty of Education. Cairo, Egypt
Mathematics Department.

Thesis Title: "On Generalizations of Injective and Extending Modules".

Supervisors: Prof. Kamal. M. A

Relevant Coursework: Rings and Modules Theory, Topological Spaces, Real Analysis, Function Analysis, Algebraic Geometry, Groups Theory, Differential Equations, Numerical Analysis, Operations researches, and Technical Writing and Seminars.

Cumulative Grade: CGPA: 3.7/4

Bachelor of Science & Education **2009**

Ain Shams University, Faculty of Education. Cairo, Egypt
Mathematics Department.

Relevant Coursework: Linear Algebra, Rings Theory, Group Theory, Representation Theory, Calculus I, II, III, Differentiation and Integration, Differential Equations (Linear and non-linear), Geometry(1,2), Statics, Vector Analysis, Group Theory(1,2), Linear Algebra, Rings Theory, Topological Spaces, Dynamics(1,2), Fluid Mechanics(1,2), Real Analysis, Function Analysis, Complex Analysis, Quantum Mechanics, Probability, Statistics, Electro-Statics, Electro-Dynamics, Mechanics of Continuous Media, Physics(1,2), Chemistry(1,2), and Educational Courses.

Cumulative Grade: Excellent with the honor degree 87.08% (CGPA: 3.6/4), and (Rank: 2rd /300)

ACADEMIC EXPERIENCE

Teaching Assistant **2012 - 2018**
Ain Shams University Cairo, Egypt

- Teaching Assistant - Mathematics Department. **Dec. 2017 – 2019**
- M.Sc. Student and Teaching Assistant - Mathematics Department. **2012 – 2016**
    - Abstract Algebra, Discrete Math (Combinatorics), Group Theory(1,2), Linear Algebra, Matrix Theory, Rings Theory, Representation Theory, Calculus I, II, III, Graph Theory, Differentiation and Integration, Numerical Analysis, Operation Research, Game Theory, Differential Equations (Linear and non-linear), Geometry(1,2), Measure Theory, Mathematical Logic, Algebraic Geometry, Vector Analysis, Topological Spaces, Real Analysis, Function Analysis, Complex Analysis, Probability, Statistics and Special Functions.

    Aug. 2011 – 2018
- Organize reference materials, visual aids, and other materials as required by college teachers for lectures.
- Assist in the preparation and administration of examinations, grade examination, term papers, and laboratory reports.
- Lab Assistant- Matlab, Mathematica, and Fortran. **May. 2013 - 2018**

CONFERENCES (2014-2016)

- One Day Conference in Algebra'' Faculty of Science, Al-Azhar University, Cairo, Egypt, October 2021.

- National Conference on Mathematics Academy of Scientific Research and Technology'' Cairo, Egypt 14-16 December 2018.

HONORS & AWARDS

- Award of Appreciation, Recognition and Excellence, Ain Shams University. 2009
- Ain Shams Award for annual publications 2022, 2024, 2025, 2026

SKILLS

- **Applications:**

  - Microsoft Office (Excel and data analyzing)
  - SPSS
  - AI teaching tools for Mathematics
  - Latex.
  - Mat-lab.
  - Mathematica.
  - FORTRAN.
  - Python
  - R

- **Languages Skills:**

  - **Arabic:** Native speaker.
  - **English:** Excellent spoken and written.
  - **Chinese:** I have got HSK3 by Oct. 2021.

- **Soft Skills:**

- Organizational skills: preparation and implementation of undergraduate courses and organizing work activities.
- Presentation and Communication Skills.
- Planning and Mind Mapping.
- Stress & time management
- Emotional intelligence
- Feasibility studies.

PERSONAL DATA

Date of Birth: October 24, 1987
Nationality: Egyptian
Marital Status: Married

REFERENCES

References Furnished Upon Request

Google Scholar account
https://scholar.google.com/citations?user=lQhMskUAAAAJ
Research gate account
https://www.researchgate.net/profile/Mahmoud-Mehany
Twitter account
https://twitter.com/Adammahany
Linkedin account
https://www.linkedin.com/in/mahmoud-mehany-02621925b/