CURRICULUM VITAE

Name: Tareq Mohammad Hamadneh

Place/Date of birth: *Saudi Arabia, July 27th, 1985*

Nationality: *Jordanian*

Work Place: *Al Zaytoonah University of Jordan, Amman, Jordan. Department of Mathematics*

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GoogleScholar: *https://scholar.google.com/citations?user=Mhcgds0AAAAJ&hl=en*

***Scopus**: https://www.scopus.com/authid/detail.uri?authorId=56879088500*

***ResearchGate**: https://www.researchgate.net/profile/Tareq-Hamadneh/research*

1. EDUCATION

- 2013- Jan, 2018 — **PhD** at the Department of Mathematics and Statistics, University of konstanz, **Germany (Top 150-250, Times Ranking).** Concentration: **Numerical Optimization and Computational.** Advisor: Prof Juergen Garloff.
- 2008- 2011 — **M.Sc.** in Mathematics, Al al-Bayt University, **Jordan.** Concentration: Applied **Algebra**. Advisor: Prof Khaled Al-Sharo.
- 2003- 2007 — **B.Sc.** in Mathematics, Al al-Bayt University, **Jordan**.

Ph.D. Dissertation

Bounding Polynomials and Rational Functions in the Tensorial and Simplicial Bernstein Forms.

M.Sc. Dissertation

Weakly c-Normally Embedded Subgroups of Finite Groups

2. ACADEMIC POSITIONS

- August 2023- — **Associate professor** at the Department of Mathematics, Al-Zaytoonah University of Jordan, Amman, Jordan
- Sep 2018 – 2023 — **Assistant professor** at the Department of Mathematics, Al-Zaytoonah University of Jordan, Amman, Jordan.
- 2024

Lecturer at the Department of Basic Science, Al Hussain Technical University, Amman

- March 2019- Feb, 2022 — **Returning expert** at Deutsche Gesellschaft für Internationale Zusammenarbeit, **GIZ**, funded by CIM.
- Feb 2017- Feb 2018 — **Post-Doc researcher** in Modeling and numerical optimization for Control Theory**,** Section of Automation and Control, Aalborg University, **Denmark**. Supervisor: Rafael Wisniewski. CodeMe project.
- 2013-2017 — **PhD candidate,** in Mathematics at the Department of Mathematics and Statistics, University of Konstanz, **Germany**. Supervisor: Juergen Garloff.
- 2016 — **Research assistant**, in Linear and quadratic Optimization, at the Department of Mathematics and Statistics, University of Konstanz, Germany. Supervisor: Juergen Garloff.
- 2015 — Students and research assistant at the Department of Economics, University of Konstanz. Supervisor: Volker Hahn.
- 2007-2013 — High school teacher of Mathematics, Jordan Ministry of Education, Al Mafraq City, Jordan.

3. RESEARCH INTERESTS

- ***Numerical Optimization****:* Global and local optimization methods for random functions; tight enclosures for the range and graph of nonlinear functions; interpolation of interval valued data for algebraic and trigonometric polynomials, rational and splines. Solution of systems of linear equations with not sharply defined coefficients; solution of systems of algebraic equations.

- ***Stability and Control Theory (Application)*****:** Lyapunov stability for linear and nonlinear control systems; Control Design; Stability of dynamic and hybrid systems. Expansion of polynomials and rational functions by *Bernstein expansion* and optimizing bounds for the range and graphs. Algorithms for controller and certificates of positivity.

- ***Modeling****:* Using of a new relaxation technique for multivariate polynomials and rational functions over different areas; minimization and positivity of nonlinear functions. Designing of new mathematical models for applications.

- **Fractional Modeling**: Discrete fractional reaction and diffusion systems.

- ***Differential Geometry:*** Surfaces of finite types; faces of coordinate finite type; Laplace operator.

4. HONORS AND AWARDS

- **2019** — **Best paper** award from the 2019 JEEIT conference to my joint paper, track mathematical modeling.
- **2016** — The International (one year) **Scholarship** for **PhD candidates,** University of Konstanz, Germany. This scholarship is offered every year to 10 talent PhD students after writing a successful proposal and passing the interview.
- **2015** — **Research Assistant** (one semester) Fund from the Department of Economics at University of Konstanz, Germany.

5. TEACHING EXPERIENCE

- **Teaching** (since 2018) — Mathematical modelling and optimization (1+2), Computerized mathematics, Computerized modeling, Numerical analysis (1+2), Linear Algebra (1+2), Ordinary Differential equations, Complex Analysis, Calculus at Al-Zaytoonah University of Jordan.
- **Teaching** (2008-2013) — Mathematics high school teacher, Jordan Ministry of Education, Jordan.

6. ORGANIZATION

- **Organization** — Working group in mathematical Optimization, Konstanz University of Applied Sciences (HTWG), Germany, for the SRP program, 2015. This group presented results from the SRP program to local seminars and master students in Konstanz.
- **Organization** — Working group of bachelor students, Al al-Bayt University, Jordan, 2005-2007, collaboration between the welcome center and bachelor groups.

7. RESEARCH PROJECTS

- **2023-2024** — **Research project grant** from Al Zaytoonah University of Jordan for "*Mathematical Optimization and new control theory for designing and developing smart agriculture system based on the artificial intelligent and machine learning". project number 2023-2022/17/34.*
- **2019-2021** — **Research project grant** from Al Zaytoonah University of Jordan about Mathematical model and control systems of Solar Energy, project number 2019-2018\585\G12.
- **2019-2022** — **The German organization:** Deutsche Gesellschaft für Internationale Zusammenarbeit **(GIZ)** fund for returning experts,

project number 15.2011.3-003.30.

- **2017-2018** **The Danish** Council for Independent Research under the grant number DFF- 4005-00452 in the project **CodeMe,** Aalborg University, Denmark.

2015 DAAD German Academic Exchange Service (Program: **DAAD stibet Doktoranden**), (one semester) research assistant fund, University of Konstanz- Germany.

- **2014** Research **Grant** from the University of Applied Sciences / HTWG Konstanz through the **SRP program**, Germany. This program was running for prof Juergen garloff and his team. I was involved in this project after global results in the field.

8. LIST OF PUBLICATIONS (Indexed: Scopus Sc, and Clarivate web of science ISI)

Year 2025

1- ISI(Q1) Optimal energy management of distributed generation resources in a microgrid under various load and solar irradiance conditions using the artificial bee colony algorithm, *Scientific Reports* (Nature Springer) (**T Hamadneh**, O AlSayyed et al.)

2- Sc(Q2) Program Manager Optimization Algorithm: A New Method for Engineering Applications. *International Journal of Intelligent Engineering & Systems*, (**T Hamadneh**, B Batiha, et al.)

3- Sc(Q2) Application of the Orangutan Optimization Algorithm for Solving Vehicle Routing Problems in Sustainable Transportation Systems, Journal of *Engineering, Technology & Applied Science Research,* (Anita Susanti, **T Hamadneh**, B Batiha, et al.)

4- ISI(Q2) Optimization of Reconfiguration and Resource Allocation for Distributed Generation and Capacitor Banks Using NSGA-II: A Multi-Scenario Approach., *CMES-Computer Modeling in Engineering & Sciences* , (**T Hamadneh**, B Batiha, et al.)

5- ISI(Q1) Barber Optimization Algorithm: A New Human-Based Approach for Solving Optimization Problems, *Computers, Materials and Continua*, (**T Hamadneh**, B Batiha, et al.)

6- Sc (Q2) Makeup Artist Optimization Algorithm: A Novel Approach for Engineering Design Challenges, *International Journal of Intelligent Engineering & Systems*, (**T Hamadneh**, B Batiha, et al.)

7- Sc (Q2) Builder Optimization Algorithm: An Effective Human-Inspired Metaheuristic Approach for Solving Optimization Problems, *International Journal of Intelligent Engineering & Systems*, (**T Hamadneh**, B Batiha, et al.)

8- Sc (Q2) On the Application of Tailor Optimization Algorithm for Solving Real-World Optimization Application. *International Journal of Intelligent Engineering & Systems*, (**T Hamadneh**, B Batiha, et al.)

9- 2- Sc Spider-Tailed Horned Viper Optimization: An Effective Bio-Inspired

(Q2) Metaheuristic Algorithm for Solving Engineering Applications. *International Journal of Intelligent Engineering & Systems*, (**T Hamadneh**, B Batiha, et al.)

10- Sc (Q2) Orangutan Optimization Algorithm: An Innovative Bio-Inspired Metaheuristic Approach for Solving Engineering Optimization Problems. *International Journal of Intelligent Engineering & Systems*, (**T Hamadneh**, B Batiha, et al.)

Year 2024

11- Sc (Q4) Quantifying non-compactness in fixed point theorems: a measure-theoretic and applied approach. Adv. Fixed Point Theory. (H Qawaqneh, IA Falahah, **T Hamadneh**)

12- ISI (Q1) Magnificent Frigatebird Optimization: A New Bio-Inspired Metaheuristic Approach for Solving Optimization Problems, *Computers, Materials and Continua*, (**Tareq Hamadneh**, Khalid Kaabneh, Ibraheem AbuFalahah, et al.)

13- ISI (Q2) Far and Near Optimization: A New Simple and Effective Metaphor-Less Optimization Algorithm for Solving Engineering Applications., *CMES-Computer Modeling in Engineering & Sciences (***T Hamadneh**, K Kaabneh, O Alssayed, *et al.*)

14- Sc (Q2) Sales Training Based Optimization: A New Human-inspired Metaheuristic Approach for Supply Chain Management, *International Journal of Intelligent Engineering & Systems*, (Tareq Hamadneh, Belal Batiha, Osama Al-Baik, et al.)

15- ISI(Q2) Using the Novel Wolverine Optimization Algorithm for Solving Engineering Applications, *CMES-Computer Modeling in Engineering & Sciences*, (Tareq Hamadneh, Belal Batiha, Omar Alsayyed, et al.)

16- ISI (Q1) Application of Stork Optimization Algorithm for Solving Sustainable Lot Size Optimization. *Computers, Materials and Continua, (***T Hamadneh**, K Kaabneh, O Alssayed, *et al.*)

17- Sc (Q2) Fossa Optimization Algorithm: A New Bio-Inspired Metaheuristic Algorithm for Engineering Applications. *International Journal of Intelligent Engineering & Systems, (***T Hamadneh**, B Batiha, O Alsayyed, *et al.*)

18- Sc (Q2) On the Application of Potter Optimization Algorithm for Solving Supply Chain Management Application. *International Journal of Intelligent Engineering & Systems, (***T Hamadneh**, B Batiha, O Alsayyed, *et al.*)

19- Sc (Q4) Quantifying non-compactness in fixed point theorems: a measure-theoretic and applied approach, Adv. *Fixed Point Theory, (*Haitham Qawaqneh, Ibraheem Abu Falahah, **Tareq Hamadneh**)

20- Sc (Q2) Sculptor Optimization Algorithm: A New Human-Inspired Metaheuristic Algorithm for Solving Optimization Problems, *International Journal of Intelligent Engineering & Systems*, (T **Hamadneh**, K Kaabneh, O AlSayed, G Bektemyssova. *et al.*)

21- Sc (Q2) Enhancing Agricultural Operations Through AI-Driven Agent Communication in Smart Farming Systems, *Ingénierie des Systèmes d'Information* , (Mohammad A Obeidat, Jalal Abdallah, Tareq Hamadneh. *et al.*)

22- Sc (Q2) Addax Optimization Algorithm: A Novel Nature-Inspired Optimizer for Solving Engineering Applications, *International Journal of Intelligent Engineering and Systems*, 2024, 17(3), pp. 732–743 (Omar Alsayyed., **Tareq Hamadneh**, Al-Tarawneh, H. *et al.*)

Year 2023

23- ISI (Q1) The new Four-Dimensional Fractional Chaotic Map with Constant and Variable-Order: Chaos, Contro and Synchronization, in *Mathematics*, (**Tareq Hamadneh**, Souad Bensid Ahmed, Hassan Al-Tarawneh, *et al.*)

24- ISI (Q1) On Chaos and Complexity Analysis for a New Sine-Based Memristor Map with Commensurate and Incommensurate Fractional Orders, in *Mathematics*, (**Tareq Hamadneh**, Abderrahmane Abbes, Hassan Al-Tarawneh, *et al.*)

25- ISI (Q1) The FitzHugh–Nagumo Model Described by Fractional Difference Equations: Stability and Numerical Simulation, in *Axioms*, (**Tareq Hamadneh**, Amel Hioual, Omar Alsayyed, *et al.*)

26- ISI (Q1) Novel Approach to Multi-Criteria Decision-Making Based on the n, mPR-Fuzzy Weighted Power Average Operator, in *Symmetry*, (**Tareq Hamadneh**, Hariwan Z Ibrahim, Mayada Abualhomos, *et al.*)

27- Sc (Q4) On the Optimization of Bi-variate Logarithmic Functions Using Bernstein-Lagrange Method, in *2023 International Conference on Information Technology* (ICIT), (S Fatima, Abdelrahman Aloudat, **Tareq Hamadneh**).

28- ISI (Q1) Local Stability, Global Stability, and Simulations in a Fractional Discrete Glycolysis Reaction–Diffusion Model, in *Fractal and Fractional*, 2023 **(Tareq Hamadneh**, Amel Hioual, *et al.)*

29- ISI (Q1) On Finite-Time Blow-Up Problem for Nonlinear Fractional Reaction Diffusion Equation: Analytical Results and Numerical Simulations, in *Fractal and Fractional*, 3023. (**Tareq Hamadneh**, Zainouba Chebana, *et al.)*

30- ISI (Q1) Finite Time Stability Results for Neural Networks Described by Variable-Order Fractional Difference Equations, in *Fractal and Fractional*, 2023. (**Tareq Hamadneh**, Amel Hioual, *et al.).*

31- ISI (Q1) Complexity and Chaos Analysis for Two-Dimensional Discrete-Time Predator–Prey Leslie–Gower Model with Fractional Orders, in *Axioms*, MDPI 2023. (**Tareq Hamadneh**, Abderrahmane Abbes, *et al.)*

32- ISI (Q1) Refinements of the Euclidean Operator Radius and Davis–Wielandt Radius-Type Inequalities, in *Symmetry*, MDPI, 2023. (**Tareq Hamadneh,** Mohammad W Alomari, *et al.)*

33- ISI (Q1) Initial Coefficients Upper Bounds for Certain Subclasses of Bi-Prestarlike Functions. in *Axioms*, MDPI, 2023 (**Tareq Hamadneh**, Ibraheem Abu Falahah, *et al.*)

34- ISI (Q1) Ruled and Quadric Surfaces Satisfying $\Delta I N = \Lambda N$, in *symmetry*, 2023; 15(2):300. https://doi.org/10.3390/sym15020300 (H. Al-Zoubi**, T. Hamadneh**, M. AbuHammad, M. Al-Saabbagh).

Year 2022

35- ISI (Q1) Numerical Optimization and Positivity Certificates for Polynomials and Rationals over Simplices, in *Journal of Computational and Applied Mathematics.* Volume 414. pp. 114430, (2022). (**T. Hamadneh**, I. Abu-Falahah and M Alqudah).

36- ISI (Q2) Direct Algorithm for Bernstein Enclosure Boundary of Polynomials, in *Journal of Mathematics*. Volume 2022, (2022). (**T. Hamadneh**, H. AL Zoubi, I. Abu Falahah and M. Al-Sabbagh)

37- ISI (Q1) Classification of Surfaces of Coordinate Finite Type in the Lorentz–Minkowski 3-Space, in *Axioms.* Volume 11. pp.326, (2022). (H. Al-Zoubi, A. Kelleci Akbay, **T. Hamadneh**, M. Al-Sabbagh)

38- Sc (Q4) Simplicial Bernstein form and Positivity Certificates for Solutions Obtained in a Stationary Digital twin by Bernstein Bubnov-Galerkin Method. *In 2022 5th International Conference on Mathematics and Statistics (ICoMS 2022) Paris, France, June 17-19, 2022*. (**T. Hamadneh, J. Merker**, G. Schuldt and W. Schimmel).

39- Sc (Q3) Discrete Maximum Principle and Positivity Certi cates for the Bernstein dual Petrov-Galerkin method. in *The 7th International Arab Conference on Mathematics and Computations (IACMC2022), 11-13 May, 2022 at Zarqa University, Jordan*. (**T. Hamadneh, J. Merker** and Gregor Schuldt), Springer.

40- Sc (Q4) On Ruled Surfaces of Coordinate Finite Type. in *WSEAS Transactions on Mathematics*. Volume 21. Pp. 765-769, (2022). W Al-Mashaleh H Al-Zoubi, H. Alzaareer, A. Zraiqat, **T. Hamadneh)**

41- Sc (Q3) Quadratic Surfaces of Coordinate Finite Type Gauss Map. in *Indian Journal of Mathematics.* Volume 64. Pp. 385-399, (2022). (H. Al-zoubi, **T. Hamadneh**, A. AA. Alkhatib)

Year 2021

42- ISI (Q2) Bivariate Generalized Shifted Gegenbauer Orthogonal System. in *Journal of Mathematics*, Volume 2021, (2021). (M. A. Alqudah and M. N. Almheidat and **T. Hamadneh**)

43- Sc (Q4) Tubular surfaces of finite type Gauss map. in *Journal for Geometry and Graphics*, Volume 25 (2021), No. 1, 45–52. (H. Al-Zoubi **, T. Hamadneh**, M. Abu Hammad and M. Al-Sabbagh)

44- Sc (Q4) Remotely Controlled Smart Home System using GSM and IOT, In The 10th International Conference on Information Technology (ICIT 2021), July 2021, pp. 748-753. (M. A Obeidat, A. M Mansour, **T. Hamadneh**, J. Abdullah)

Year 2020

45- ISI (Q1) Linear Optimization of Polynomial Rational Functions: Applications for Positivity Analysis. In *Mathematics- Journal*, 2020 (**T. Hamadneh**, M Ali and H. AL-Zoubi)

46- Sc (Q4) Fast Computation of Polynomial Data Points over Simplicial Face Values. In the Journal of *Information and Knowledge Management*, *2020 (***T. Hamadneh,** H. AL-Zloubi and S. Al Omari*).*

47- Sc (Q3) Sufficient Conditions and Bounding Properties for Control Functions Using Bernstein Expansion. *In the journal of Applied Mathematics and Information Sciences*. (**T. Hamadneh**, A. Zraiqat, H AlZoubi and M. Elbes).

48- Sc (Q3) Tubes of coordinate finite type Gauss map in the Euclidean 3-space. *In the Indian Journal of Mathematics (IJM)*, May 2020. (H. Al-Zoubi, H. Al-Zaareer and **T. Hamadneh**).

49- Sc (Q2) Control and Lyapunov Polynomials Using the Tensorial Bernstein Approximation; exact results. in *The 21st IFAC World Congress*, July, 2020. (**T. Hamadneh,** N. Athanasopoulos and R. Wisniewski).

50- Sc (Q4) Minimization and Positivity of the Tensorial Rational Bernstein Form. In the 2019 IEEE Jordan International Joint Conference on Electrical Engineering and Information Technology (JEEIT), pp. 474-479, IEEE, 2019 (**T. Hamadneh,** N. Athanasopoulos and M. ALi), **Best paper award.**

51- Sc (Q4) Conformable Fractional Bernoulli Differential Equation with applications. In the 2019 IEEE Jordan International Joint Conference on Electrical Engineering and Information Technology (JEEIT), pp. 421-424, IEEE, 2019 (A. Dababneh with **T. Hamadneh** et.).

Year 2019

52- Sc (Q4) Minimization and Positivity of the Tensorial Rational Bernstein Form. In the 2019 IEEE Jordan International Joint Conference on Electrical Engineering and Information Technology (JEEIT), pp. 474-479, IEEE, 2019 (**T. Hamadneh,** N. Athanasopoulos and M. ALi), **Best paper award.**

53- Sc (Q4) Conformable Fractional Bernoulli Differential Equation with applications. In the 2019 IEEE Jordan International Joint Conference on Electrical Engineering and Information Technology (JEEIT), pp. 421-424, IEEE, 2019 (A. Dababneh with **T. Hamadneh** et.).

Year 2018

54- Sc (Q4) The Barycentric Bernstein Form for Control Design. In *2018 IEEE American Control Conference (ACC)*, USA. 2018, pp. 3738–3743 ***(T. Hamadneh** and R. Wisniewiski).*

55- Sc (Q3) *Algorithm for Bernstein polynomial Control Design*. in ***6th IFAC Conference on Analysis and Design of Hybrid Systems ADHS 2018,*** Oxford. *pp. 283-189* **(T. Hamadneh** and R. Wisniewiski***).***

Years 2014/2015

56- Sc (Q3) Convergence of the Simplicial Rational Bernstein Form**,** in Modelling, *Computation and Optimization in Information Systems and Management Sciences*, Le Thi Hoai An, Pham Dinh Tao, and Nguyen Ngoc Thanh, Eds., Series *Advances in Intelligent Systems and Computing*, Springer, 2015 (J. Titi, **T. Hamadneh** and J. Garloff).

57- Sc (Q4) Convergence and Inclusion Isotonicity of the Tensorial Rational Bernstein Form, proceeding of the 16th GAMM–IMACS International Symposium on Scientific Computing, Computer Arithmetic, (SCAN 2014), Warwick Tucker and Jürgen Wolff von Gudenberg, Eds., *Lecture Notes in Computer Sciences*, Springer, 2015 (J. Garloff and **T. Hamadneh**).

Preprints Articles and Abstracts

58- P-print Surfaces of coordinate finite type in the Lorentz-Minkowski 3-space. in *arXiv preprint* arXiv:2208.12578**,** 2022. (H. Al-Zoubi, A. Kelleci, **T. Hamadneh**).

59- P-print Linear Optimization of Polynomials and Rational Functions Over Boxes. in *arXiv preprint arXiv:1906.03472, 2019.* ***(T. Hamadneh*** *H Al-Zoubi, M Al-Qudah, A Zraiqat).*

60- P-print Surfaces of revolution of finite III-type. in *arXiv preprint arXiv:1907.12390,* 2019 *(H. Alzoubi and* ***T. Hamadneh****).*

61- P-print Optimization and Positivity Certificates of Rational Functions using Bernstein Form. in *arXiv preprint arXiv:1906.11037,* 2019 (**T. Hamadneh,** H. Al-Zoubi, H. Alzaareer, R. Wisniewski).

62- Astract Global Optimization and Properties of Nonlinear Polynomial Functions Using Bernstein's Method. In the book of abstracts, *the International Conference Singular Problems, Blow-up, and Regimes with Peaking in Nonlinear PDEs. Moscow, November, 2019* (**T. Hamadneh** and A. Zraiqat).

63- Astract Convergence of the Rational Bernstein Form. In the book of abstracts, *16th GAMM-IMACS International Symposium on Scientific Computing, Computer Arithmetic and Validated Numerics,* SCAN 2014 (**T. Hamadneh** and J. Garloff).

9. JOURNALS AND CONFERENCES PEER-REVIEWER

1- *The 3rd International Conference on the Role of Artificial Intelligence in Sustainable Development,* RAISD 2025 **(Co-Chair)**

*2- International Journal of Intelligent Engineering & Systems (**Editor**)*

*3- Algorithms-MDPI (**Guest editor**)*

*4- Inass express (**Editor**)*

*5- Automatica Journal (**reviewer**)*

*6- Nonlinear Analysis: Hybrid Systems (**reviewer**)*

*7- IEEE Transactions on Optimization, modeling and control (**reviewer and organizer**)*

10. NETWORK AND INTERNATIONAL ACTIVIVITIES

- **Otto-von-Guericke-Universität Magdeburg (Germany):** The collaboration started with prof. Frank Werner in 2024 for doing research, writing projects and establishing special issues in journals together with organizing conferences. The collaboration resulted so far: Seven published papers, special issue in Algorithms-MDPI and writing a research project.

- **Leipzig University of applied and Science (HTWK):** The collaboration with prof Jochen Merker from HTWK has been started in 2021 during my participation in NUMDIFF-16 conference (Halle- Saale, 2021). This collaboration resulted two joint papers and another one is under review, together with formulating and announcing our interested work by European fellowships.
- **Al Zaytoonah University of Jordan (ZUJ):** I have been working at ZUJ as assistant professor in numerical optimization and modeling, since 2018-to date. Since I started this job, I did research and teaching in different areas of applied mathematics. I also **won two local research projects** for supporting my research in mathematical model for stability of solar energy systems, with Prof Amjed Zraiqat.

- **Queen's University Belfast:** In the beginning of 2018, I have started the collaboration with Dr Nikolaos Athanasopoulos in order to convert pure control theory to numerical optimization and tools, for the proposed applications at QUB. We published three joint papers in control theory and stability analysis.
- **Aalborg University:** In October, 2016, I got in touch with Prof Rafael Wisniewski in order to use the Bernstein optimization to develop the general theory for computing certificates of positivity for nonlinear control systems. I got a one year, 2017, **postdoc position** for the last year of the **CodeMe** project, Synchronous with the last stage of writing and reviewing my PhD thesis, supported by the Danish council for independent research. The life time of the CodeMe project was three years, 2014-2017, focusing on optimization and stability of control systems, computations and modeling, where we published three papers in the field.
- **University of Konstanz:** The research group (leaded by Prof Garloff) at University of Konstanz is a leading in numerical optimization and modeling. Juergen Garloff is an expert in Bernstein expansion and nonnegative matrices. I worked with this group in 2013 to 2018. The collaboration has resulted a **PhD** thesis includes two joint worth publications in constant bounding functions of high dimension nonlinear functions. Results extended the Bernstein approach to the rational case.
- **Jordan Ministry of Education (JME):** As a **high school teacher**, I was working at JME for five years, 2008- 2013. Experience of teaching and dealing with school students in Jordan mad me pioneer in training and transferring skills of mathematics, computer science and social relationships to many various audiences. Many activities and local projects have been organized and developed with school teams at three different schools in Al Mafraq city, Jordan.

11. Supervision and Master Students

1) Thesis title: The Existence of Fixed Points for Exponential Functions in Taylor Bernstein Polynomial Form. Student: Rania AbuHammad (Finished 2022)

2) Thesis title: Optimizing of exponential functions in the simplicial Taylor-Bernstein form with applications on fixed-points analysis. Student: Ismael Rajody (Finished 2023)

3) Thesis title: Bernstein Optimization for Logarithmic Functions in Lagrange Polynomials over a Box. Student: Fatima Al Shaar (2023-2024)

4) Thesis title: Minimizing Bernstein trigonometric functions in Bernstein Newton divided differences polynomials over boxes. Student: Mosheer AlGhanem (2023-2024)

5) Thesis title: Optimizing of Continuous functions in the simplicial Taylor-Bernstein form with applications on fixed-points analysis. Student: Osama Rajody (2023-2024).

6) Thesis title: Algebraic Optimization Method for Differentiable Functions in thehe Tensor- Bernstein Form. Student: Ahmad Alnawaji (2024-2025).

12. TRAINING AND RESEARCH VISITS

Training (2019)	Dies ProGrant, Trainer for **Proposal Writing for Research Grant**. Organized by University of Cologne and DAAD in Beirut, Lebanon, May and December.
Training (2019, 2020)	STEM **Early Career** Academics in Jordan Universities. Organized by the British Council, November, December, Jan.
Training (2019)	**Sustainable Development** through Effective Knowledge Sharing: Concepts, Methods and Processes. Organized by giz (German organization CIM), June 14-15.
Training (2019)	Applications in **Quality Management** Systems in ZUJ. Organized by the Jordanian Accreditation and Quality Assurance, June 24-26.
Research Visit (2018)	Queen's University Belfast, UK, August 13- 18.
Research Visit (2017)	University of **Rennes**, France, September 6- 9.
Training (2017)	**Marie Curie Talent Course for Proposal-Writing**, Aalborg University, Denmark, June 12- 13.

13. SELECTED PROFESIONAL AND SCIENTIFIC TALKS

Talk (2025)	ICELECE- Conference, Heraklion, Greece, July 20-22.
Talk (2024)	CoDIT IFAC- conference, Malta, Julty, 2024.
Talk (2023)	ICoMS conference, Leipzig, Germany, 2023
Session chair (2023)	The 10th International Conference on Information Technology (ICIT 2021).
Talk (2022)	In 2022 5th International Conference on Mathematics and Statistics (ICoMS 2022)Paris, France, June 17-19, 2022.
Talk (2022)	The 7th International Arab Conference on Mathematics and Computations (IACMC2022), 11-13 May, 2022 at Zarqa University, Jordan.
Session chair (2021)	The 10th International Conference on Information Technology (ICIT 2021).
Talk (2019)	The 2019 IEEE Jordan international joint conference on electrical engineering and information technology, Amman, Jordan.

Abstract (2018)	The 2018 American Control Conference, USA.
Abstract (2018)	IFAC Conference on Design of Hybrid Systems, ADHS, UK.
Talk (2018)	Department of Mathematics, Al-Zaytoonah University of Jordan.
Workshop (2017)	Community Based Care and Technology-supported Health, Aalborg University, May.
Talk (2017)	Department of Mathematics and Statistics, University of Konstanz, January.
Talk (2017)	Section of Automation and Control, Aalborg University**, May, 2017.**
Talk (2015)	The Conference of Modelling, computation and optimization in information system and management sciences (MCO 2015), Metz, France.
Talk (2014)	The Conference, 16th GAMM-IMACS international sumposium on scientific computing, computer arithmetic, scan 2014, university of Wurzburg, Germany.

14. LANGUAGES AND SKILLS

- **Languages** Native in Arabic
  Fluent in English
  Fluent in German
- **Computer** Microsoft Office, Scientific Work Place, Latex.
- **Software** Matlab.

REFERENCES

Rafael Wisniewski, Professor: Section of Automation and Control. Aalborg University, 9220 Aalborg East, Denmark. *Email:* raf@es.aau.dk

Amjad Zraiqat, Professor: Department of Mathematics. Al Zaytoonah University of Jordan, Jordan. *Email: amjad@zuj.edu.jo*

Jochen Merker, professor: Mathematical and natural science center. Leipziq University of Applied Sciences (HTWK), Germany. *Email*: jochen.merker@htwk-leipzig.de