Dr. Ahmad Sultan

Medinah-Munawwarah
Saudi Arabia
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PERSONAL DETAILS

Nationality	Syrian
Mother Tongue	Arabic
Other Languages	English and German
Family Status	Married, one daughter

EDUCATION

Dr. rer. nat. in Mathematics 10.2006
TU Kaiserslautern, Germany
"Optimization of Beam Orientation in Intensity Modulated Radiation Therapy Planning"
Thesis advisor: Karl-Heinz Küfer (ITWM)

German Diploma in Mathematics (Int. M. Sc. is included) 09.2002
TU Kaiserslautern, Germany
"Inclusion Exclusion Type Evaluation Criteria for Beam Arrangement in Radiation Therapy Planning". Research advisor: Karl-Heinz Küfer (ITWM)

BSc. in Mathematics 07.1998
Aleppo University, Aleppo, Syria

APPOINTMENTS

Assistant Professor of Mathematics 09.2011–08.2024
Taibah University, Madinah Munawwarah, Saudi Arabia

Assistant Professor of Mathematics 10.2010–09.2011
King Khaled University, Abha, Saudi Arabia

Postdoctoral Fellow 09.2009–09.2010
International Center for Computational Logic, Faculty of Computer Sciences, TU Dresden, Germany

Assistant Professor of Mathematics 08.2007–09.2009
King Saud University, Riyadh, Saudi Arabia

PhD Position 11.2002–10.2006
Fraunhofer Institute für Techno und Wirtschaftsmathematik (ITWM), Kaiserslautern

Tutor
Department of Mathematics, TU Kaiserslautern, Germany

- Scheduling Algorithms — Summer Semester 2005
- Scheduling Algorithms — Winter Semester 2003/04
- Probability and Algorithms — Winter Semester 2002/03

Research Assistant 01.2001–10.2002
Fraunhofer Institute für Techno und Wirtschaftsmathematik (ITWM), Kaiserslautern, Germany

Research Assistant 04.2000–12.2000
Fraunhofer Institute für Experimentalles Software Engineering (IESE), Kaiserslautern, Germany

Postgraduate Lecturer Aca.Year 1998/99
Department of Mathematics, Aleppo University, Aleppo, Syria

AWARDS

International Biometric Society Best Poster Presentation Award July 2008
XXIVth International Biometric Conference, University College Dublin, Ireland

International Biometric Society Continent-Specific Award of Best Contributed Paper For Asia July 2008
XXIVth International Biometric Conference, University College Dublin, Ireland

GRANTS

Research Projects' Grants
Deanship of scientific research, Taibah University, Saudi Arabia

- PI, Project Nr. 1434/4201 — Aca. Year 2013/14

  Mathematical Model for Radiation Therapy: an Application for Optimizing Beam Selections in Radiation Therapy.

- PI, Project Nr. 1433/1418 — Aca. Year 2012/13

  Pseudo-Automatic Beam's Eye View for Multi-Criteria Intensity-Modulated Radiation Therapy.

ICCL Summer-School Grant September 2008
"Computational Logic and Cognitive Science", Technical University Dresden, Germany.

PhD Grant 11.2002–10.2006
Department of Optimization, Fraunhofer Institute (ITWM), Kaiserslautern, Germany

PUBLICATIONS [statistics]

Single-Author Peer-Reviewed Journal Papers:

13. A.-S. Azizi-Sultan, "Resolution Proof System for Constrained Pseudo-propositional Logic", *International Journal of Fuzzy Logic and Intelligent Systems* 25(3):343–350, (2025).

12. A.-S. Azizi-Sultan, "Resolution for Constrained Pseudo-propositional Logic", *CoRR* 2306.06630, (2023).

11. A.-S. Azizi-Sultan, "Constrained Pseudo-Propositional Logic", *Log. Univers.* 14:523–535, (2020).

10. A.-S. Azizi-Sultan, "Dose-Volume Histogram Evaluation Scheme for Beam Orientations in Intensity-Modulated Radiation Therapy", *Comp. Appl. Math.* 37:191–204, (2018).

9. A.-S. Azizi-Sultan, "Pseudo-automatic beam orientations in multi-criteria intensity-modulated radiation therapy", *J Comb Optim* 31:1746–1759, (2016).

8. A.-S. Azizi-Sultan, "Automatic Selection of Beam Orientation in Intensity-Modulated Radiation therapy", *Electronic Notes in Discrete Mathematics* 36:127–134, (2010).

Book Chapter:

7. K.-H. Küfer, M. Monz, A. Scherrer, Ph. Süss, F. Alonso, A.-S. Azizi-Sultan, Th. Bortfeld, and Ch. Thieke,"Multicriteria optimization in intensity modulated radiotherapy planning", Handbook of optimization in Medicine, Series: Springer Optimization and Its Applications, Vol. 26 (2009), Pardalos, P.M.; Romeijn, eds.

Peer-Reviewed Conference Papers:

6. A.-S. Azizi-Sultan, "Pseudo-Propositional Logic", *In Proceedings of ARQNL 2018, the 3rd International Workshop on Automated Reasoning in Quantified Non-Classical Logics (associated with FLoC and IJCAR 2018),* 2095:26–33, Oxford, UK, (2018).

5. A.-S. Azizi-Sultan, "Automatic Beam's Eye View for Multicriteria Optimization in Intensity Mudulated Radiation therapy Planning", *Proceedings des 19. Symposiums Experimentelle Strahlentherapie und Klinische Strahlenbiologie*, 19:151-155, Dresden, Germany, (2010). ISSN 1432-864X.

Technical Reports:

4. A.-S. Azizi-Sultan, and K.-H. Küfer, "A dynamic algorithm for beam orientation in multicriteria IMRT planning", Technical Report, Fraunhofer ITWM, Nr. 101, (2006).

3. K.-H. Küfer, M. Monz, A. Scherrer, Ph. Süss, F. Alonso, A.-S. Azizi-Sultan, Th. Bortfeld, and Ch. Thieke, "Multicriteria optimization in intensity modulated radiotherapy planning", Technical Report, Fraunhofer ITWM, Nr. 77 (2005).

Theses:

2. A.-S. Azizi-Sultan, "Optimization of Beam Orientation in Intensity Modulated Radiation Therapy Planning", PhD. thesis, Technical University of Kaiserslautern, (2006)

1. A.-S. Azizi-Sultan, "Inclusion Exclusion Type Evaluation Criteria for Beam Arrangement in Radiation Therapy Planning", Diploma thesis, Technical University of Kaiserslautern, (2002).

SELECTED TALKS

Talks at International Conferences and Workshops:

9. ARQNL 2018, the 3rd International Workshop on Automated Reasoning in Quantified Non-Classical Logics (associated with FLoC and IJCAR 2018), Oxford, UK, July 18, 2018

8. The 6th biennial Canadian Discrete and Algorithmic Mathematics Conference (CanaDAM), Toronto, Canada, June 12, 2017 (declined)

7. ECCO XXV, 25th Conference of European Chapter on Combinatorial Optimization, Antalya, Turkey, April 26, 2012

6. Second Math Days, King Saud University, Riyadh, Saudi Arabia, March 15, 2012

5. ISCO International Symposium on Combinatorial Optimization, Hammamet, Tunisia, March 26, 2010

4. 23rd European Conference on Operational Research, Bonn, July 2009

3. Operations Research in Radiation Oncology Workshop Deakin University, Melbourne, Australia, February 17, 2009

Poster's Presentations:

2. 19. Symposiums Experimentelle Strahlentherapie und Klinische Strahlenbiologie, Dresden, Germany, March 5, 2010

1. XXIVth International Biometric Conference University College Dublin, Ireland, July 14, 2008

TEACHING

Experience in teaching most undergraduate math courses

I have been working as an assistant professor in Mathematics for many years in which I have had the opportunity to teach a wide variety of math courses including calculus sequence, linear and abstract algebra, differential equations, financial mathematics, probability, and statistics.

MISCELLANEOUS

Reviewer:

- American Mathematical Society. (From 04.2021 to present)
- European Journal of Operational Research. (The special issue of "Operations Research in Health Care" (EURO XXIII, Bonn, Germany, July 5-8, 2009)

Membership:

- European Chapter on Combinatorial Optimization.

Attended Seasonal-Schools:

- "Cutting Plane Methods for Integer and Combinatorial Optimization", Spring-School of the International Symposium on Combinatorial Optimization, March 22–23, 2010, Hammamt, Tunisia.
- "Winter-School on Hierarchical Matrices", Max-Plank-Institute for Mathematics in Natural Sciences, March 8–12, 2010, Leipzig, Germany.
- "ICCL Summer-School 2008 Computational Logic and Cognitive Science", 24th August – 6th September 2008, Technical University Dresden, Germany.
- "Dependable Adaptive Systems and Mathematical Modeling", The 1st Summer-School of the Rheinland-Pfalz Cluster of Excellence DASMOD, 31st July – 13th August 2006, Technical University Kaiserslautern, Germany.

Online Courses:

- **Assessment in Higher Education: Professional Development for Teachers**
  Erasmus University Rotterdam via Coursera, 2025.
  Completed: April 2025
  https://coursera.org/verify/L4VOWK3OVTLF
- **University Teaching**
  The University of Hong Kong via Coursera, 2025
  Completed: March 2025
  https://coursera.org/verify/G89LTSDACPF8

Background in Computer Science:

- Algorithms (Considerable experience, deploying mathematical modeling and optimization).
- Data structures and memory management.
- Coding and programming using mostly C++ and occasionally MATLAB.