

Norazrizal Aswad Abdul Rahman

Phone: 012-4355954

Email: aswad.rahman@usm.my

Address: 123, School of Mathematical Sciences, Universiti Sains Malaysia, 11800 USM, Penang, Malaysia

Affiliation: School of Mathematical Sciences, Universiti Sains Malaysia, Malaysia

Education Background

Universiti Utara Malaysia (UUM)

Postdoctoral Research Scholar

Title: Determining the harmony index of Malaysian national identity through analytical hierarchy process and fuzzy analytical hierarchy process

Kedah, Malaysia

Feb 2018 – May 2108

Universiti Malaysia Perlis (UniMAP)

Doctor of Philosophy in Pure mathematics.

Expertizing in fuzzy set theory, classes of fuzzy differential equations and its application.

Thesis: Fuzzy Sumudu Transform

Perlis, Malaysia

Okt 2013 – Sep 2017

Universiti Sains Malaysia (USM)

Bachelor of Science in Mathematics

Minor in Psychology, additional core subject in Chemistry.

Penang, Malaysia

Okt 2010 – Sep 2013

Kedah Matriculation College (KMK)

Physical Sciences

Kedah, Malaysia

Jul 2009 – May 2010

Research and Teaching Experiences

National Poison Center, Universiti Sains Malaysia

Research Assistant

- *Conducting a survey on the habit and effect of smoking on over 5000 Malaysians smoker and ex-smoker.*
- *Provide advices and supports for smoker in their quitting progress.*

Penang, Malaysia

May 2011– Jun 2011

Malaysian Public Works Department (JKR)

Research Officer cum Secretary

- *Investigating the non-revenue water problems across 5 districts in Perlis state.*
- *Handling billing problems regarding meter reading for 2013 and early 2014.*

Perlis, Malaysia

Sep 2013 – Feb 2014

Universiti Malaysia Perlis

Research Assistant

- *Conducting research in the area of fuzzy mathematics.*
- *Peer-reviewing articles on applied mathematics such as on staff performance evaluations and rankings.*
- *Facilitating LaTeX workshops for postgraduate students.*

Perlis, Malaysia

Mar 2014 – Feb 2016

Universiti Utara Malaysia

Research Assistant

- *Conducting research in qualitative sciences*
- *Focus on ranking and generating index between six cultural dimensions in Malaysia using fuzzy analytical hierarchy process.*

Perlis, Malaysia

Nov 2017 – Mar 2018

Research Interests and Expertise

Current Research: Fuzzy Number, Fuzzy Nonlinear Differential Equations (Strongly generalized differentiability), Fuzzy Multi-Criteria Decision Making

General Interest: Fuzzy Set Theory, Fuzzy Mathematics, Multi-criteria decision making, Numerical Methods

Professional Membership

Member of European Society of Fuzzy Logic and Technology (EUSFLAT) since 2020 (Membership number.: 1235)
Member of Persatuan Sains Matematik Malaysia (PERSAMA) since 2017. (Membership no.: NB2017-4)

Publications

Research book

1. M.H. Mohd, N.A. Abdul Rahman, N.N. Abd Hamid and Y. M. Yatim, 2019, Dynamical Systems, Bifurcation Analysis and Applications, Springer-Nature.

Journal Articles

1. N.A. Abdul Rahman and M.Z. Ahmad. "Applications of the Fuzzy Sumudu Transform for the Solution of First Order Fuzzy Differential Equations." *Entropy* 17.7 (2015): 4582-4601.
2. M.Z. Ahmad and N.A. Abdul Rahman. "Explicit Solution of Fuzzy Differential Equations by Mean of Fuzzy Sumudu Transform." *International Journal of Applied Physics and Mathematics* 5.2 (2015): 86-92.
3. N.A. Abdul Rahman and M.Z. Ahmad. "Fuzzy Sumudu Transform for Solving Fuzzy partial Differential Equations." *The Journal of Nonlinear Sciences and Applications* 9.5 (2016): 3226-3239.
4. N.A. Abdul Rahman and M.Z. Ahmad. "Solving Fuzzy Fractional Differential Equations using Fuzzy Sumudu Transform." *The Journal of Nonlinear Science and Applications* 10.5 (2017): 2620-2632.
5. A.K. Albzeirat, M.Z. Ahmad, S. Momani and N.A. Abdul Rahman. "Approximate Solutions of Fuzzy Differential Equations of Integer and Fractional Order using Modified Reproducing Kernel Hilbert Space Method." *The Journal of Nonlinear Science and Applications* 10.11 (2017): 2423-2439.
6. N.A. Abdul Rahman and M.Z. Ahmad. "Solving Fuzzy Volterra Integral Equations via Fuzzy Sumudu Transform." *Applied Mathematics and Computational Intelligence* 6 (2017): 19-28.
7. N.A. Abdul Rahman and R. Ramli. "Identifying Important Criteria for Staff Productivity in Relation to Malaysian Cultural Values: A Comparative Review." *The Journal of Social Science Research* 6 (2018): 1174-1179.
8. N.A. Abdul Rahman. "Fuzzy Sumudu Decomposition Method for Fuzzy Delay Differential Equations with Strongly Generalized Differentiability." *Mathematics and Statistics* 8.5 (2020): 570-576.

Conference Proceedings

1. M.Z. Ahmad and N.A. Abdul Rahman. "Explicit Solution of Fuzzy Differential Equations by Mean of Fuzzy Sumudu Transform." *International Conference of Applied Physics and Mathematics in Busan, South Korea* (2015).
2. M.Z. Ahmad, N.A. Jamaluddin, E. Sakib, W.S. Wan Daud and N.A. Abdul Rahman. "False Position Method for Solving Fuzzy Nonlinear Equations." *Malaysian Technical Universities Conference on Engineering and Technology 2015 in Johor Bahru*.
3. M.Z. Ahmad, N.H. Abdul Razak, E. Sakib, W.S. Wan Daud and N.A. Abdul Rahman. "Fuzzy Homotopy Continuation Method for Solving Fuzzy Nonlinear Equations." *Malaysian Technical Universities Conference on Engineering and Technology 2015 in Johor Bahru*.
4. N.A. Abdul Rahman and M.Z. Ahmad. "Solution of Fuzzy Fractional Differential Equations using Fuzzy Sumudu Transform." *International Conference on Mathematics, Engineering and Industrial Applications 2016 in Songkhla, Thailand*.
5. N.A. Abdul Rahman and M.Z. Ahmad. "Solution of Fuzzy Partial Differential Equations using Fuzzy Sumudu Transform." *International Conference on Mathematics, Engineering and Industrial Applications 2016 in Songkhla, Thailand*.
6. N.A. Abdul Rahman and M.Z. Ahmad. "Solution of Fuzzy Partial Differential Equations using Fuzzy Sumudu Transform." *International Conference on Mathematics, Engineering and Industrial Applications 2016 in Songkhla, Thailand*.
7. N.A. Abdul Rahman. "Fuzzy Sumudu Decomposition Method for Solving Differential Equations with Uncertainty." *International Conference in Mathematical Sciences and Technology 2018 (MathTech 2018) in Penang, Malaysia*.
8. N.A. Abdul Rahman. "On the Solution of Fuzzy Delay Differential Equations." *International Conference on Computer Engineering and Mathematical Sciences (ICCEMS 2019) in Langkawi, Malaysia*.

Supervision

1. SeyedMahmoud Davoodi (PhD, **ongoing**)
2. Al-Saeedi Rafid AbdulMahdi Jasim (PhD, **ongoing**) (Co-supervisor)
3. Lim Sai Mei Lin (PhD, **ongoing**)
4. Muhammad Hairul Haikal Abdul Rahim (MSc Coursework-Dissertation, **completed**)
5. Shazrina Shaik Alavudin (MSc Coursework-Dissertation, **completed**)
6. Lim Sai Mei Lin (MSc Coursework-Dissertation, **completed**)
7. Nur Shairah Shahrul Nizam (MSc Coursework-Dissertation, **ongoing**)
8. Nur Aimi Athirah Zulkiflee (Final year project, **completed**)
9. Iffah Hazirah Ishak (Final year project, **completed**)

Course Taught

1. MAT201, Advance Calculus.
2. MGM502, Number Theory.
3. MSS414, Topics in Pure Mathematics (Fuzzy Set Theory).
4. MSS482, Graphing Technology in Mathematics and Science.
5. MAA101 Calculus for Science Students I.

Recognition

Reviewer for journals

1. Information Sciences, Elsevier.
2. Soft Computing, Springer.
3. International Journal of Fuzzy Systems, Springer
4. Matematika, Universiti Teknologi Malaysia

Reviewer for conferences

1. Simposium Kebangsaan Sains Matematik, SKSM 2018 (Mathematical Sciences National Symposium), Malaysia
2. The International Seminar on Mathematics in Industry (ISMI) and the International Conference on Theoretical and Applied Statistics (ICTAS), ISMI-ICTAS18
3. 2018 Conference on Mathematics, Informatics and Statistics (CMIS2018)