

DR. NORHAIZA AHMAD

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Faculty of Science,
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EDUCATION

- 2008 *Ph.D.in Statistics:*
University of Kent, United Kingdom.
Specialization: *Bioinformatics*
Theses: *Statistical Profiling of Proteomics Data*
Theses Advisers: **Professor Jian Zhang/Professor P.J.Brown**
- 2003 *M.Sc. in Statistics,*
University of Sheffield, United Kingdom.
Dissertation: *Customer Profiling for the Employment Service*
Dissertation Adviser: **Dr. Eleanor Stillman**
- 1993-1996 *B.Sc. (HONS) in Mathematics, Statistics & Operational Research,*
University of Manchester, Institute of Science & Technology (UMIST),UK
- 1992 *A-Levels in Economics, Mathematics and Statistics,*
Centre of Preparatory Studies, Institute Technology Mara, Malaysia (ITM).

PERSONAL

- **D.O.B:** 27 July 1973; **Nationality:** Malaysian; **Language:** Bahasa Malaysia, English.

ACADEMIC APPOINTMENTS

- Senior Lecturer**, Universiti Teknologi Malaysia (March 2010-Present)
Lecturer, Universiti Teknologi Malaysia (2004-March 2010)
Tutor, Universiti Teknologi Malaysia (2000-2003)

OTHER EMPLOYMENTS

- 2003-2006 **Tutor**, Institute of Mathematics, Statistics & Actuarial Science, University of Kent, UK.
 - Marked tutorial sheets for various students' assignments
 - Assisted lecturers at tutorial and computer classes in Statistics for 1st year students.
- April 2003 **Statistical Data Analyst**, University of Kent, UK.
 - Commissioned by University of Kent's Hospitality to analyze students satisfaction survey.
- 2000-2003 **Tutor**, Department of Mathematics, Faculty of Science, University Teknologi Malaysia.
 - Responsible for handling tutorial classes in Statistics and Mathematics (foundation course and 1st year students).
 - Involved in preparing tutorial materials when they are not available.
- 1996 - July 2000 **Production Planner/Controller: Automotive Plant**, Toyota & Koyo Seiko Autoparts, Sdn Bhd, Shah Alam, Malaysia.
 - Responsible for the production planning of the plant's annual, monthly and daily production.
 - Inventory control and monitoring stocks availability everytime.
- ISummer 1995 **Internship** at the Department of Mathematics, Universiti Teknologi Malaysia, under the supervision of Dr. Zuhaimy Ismail.

RESEARCH GRANTS-(PRINCIPAL INVESTIGATOR) =RM 248,000

1	2020 Jan 1 - 2022 Dec 31	3	UTMFR	PY/ 2019/ 02100		<i>Ridge-Based Biclustering Model In Profiling Collinear Expression Data For Infectious Diseases Studies</i>	RM85,000
2	2019 Nov 1- 2021 Oct 31	2	UTMER	PY/ 2019/ 01402	Q.J130000 .2654.18J1 7	<i>Prediction Of Discharge After Period Of River Disruptions Using Robust Least Squares Support Vector Regression</i>	RM30,000
3	2019 Nov 1- 2021 Oct 31	2	CRG NATIONAL	PY/ 2019/ 03315	R.J130000 .7354.4B4 97	<i>CRG 28.3: Comprehensive Statistical Testing and Evaluation for Artefact Modelling</i>	RM20,000
4	1 Oct 2016- 31 Dec 2017	2	GUP	PY/ 2016/ 07502	Q.J130000 .2626.12J6 9	<i>Time-Based Clustering on Homogeneous Riverflow Process.</i>	RM20,000
5	1 Jul 2014- 30 June 2015 (ext. Sept 15)	2	GUP Tier 1	PY/ 2014/ 01923	Q.J130000 .2526.09H 04	<i>Time-Dependent Interval Data In The Classification Of Rainfall Patterns</i>	RM20,000
6	1 Apr 2011- 31 Mac 2012 (ext. 30 Sept 12)	2	GUP Tier 2	PY/ 2011/ 00830	Q.J130000 .2626.04J0 9	<i>Clustering Based Classification on Daily Rainfall Pattern.</i>	RM40,000
7	15 Nov 2009- 14 Nov 2011 (ext. May2012)	3	FRGS	PY/ 2009/ 00305		<i>Visualizing proximity data using pseudo-distance in Multidimensional scaling technique.</i>	RM33,000

RESEARCH GRANTS-SELECTED LIST (MEMBER INVESTIGATOR)

1	1 Nov19- 31 Oct 21	CRG NATIONAL	PY/2020/03444	CRG28.4 Development Of Gis Database For Data Management Of Archaeological Artefacts	Zulkepli Majid
2	1 Nov19- 31 Oct 21	CRG NATIONAL	PY/2020/03373	CRG 28.2 : Construction Of Mathematical Algorithms For Artefact Modeling	Yeak Su Hoe
3	1 Nov19- 31 Oct 21	CRG NATIONAL	PY/2019/02810	CRG 28.1: Development Of Photo-Realistic 3d Model Of Archaeological Artefacts	Ali Hassan Mohamed Murid
4	1 Nov19- 31 Oct 21	CRG NATIONAL	PY/2019/02765	CRG 28.0: 3d Reconstruction Of Historical Fragments Using Advanced Mathematical Approach	Ali Hassan Mohamed Murid
5	1 Nov19- 31 Oct 21	UTMER	2019/02196	Survival Piecewise Baseline Hazard Function Incorporated With Cure Fraction And Frailty	Noraslinda
6	1 Nov19- 31 Oct 21	UTMER	2019/01278	Forecasting Johor Bahru Rainfall Using Autoregressive Integrated Moving Average (Arima) And Artificial Neural Network (Ann)	Norazlina
7	1 Aug19- 31 Jul 21	GUP T2	2019/00625	Medicine Usage Modelling Using Modified INGARCH-GLM Framework	Siti Mariam
8	Oct 2016 Sept 2017	GUP.T2	2016/07623	Trend analysis of streamflow, rainfall and temperature in Johor	Norazlina Ismail
9	May 2016- April 2017	PPRN	2015/04377	Quality Control for Bull Semen	Zainal Abdul Aziz
10	Apr 2013- March 2015	FRGS		Spatio-Temporal Modeling of Rainfall Using Generalized Additive Model	RM61,000
11	Apr 2013- March 2014	FRGS		Bayesian Survival Mixture Models In The Existence of Covariates Using Frailty Models	RM28,000

ACADEMIC PUBLICATIONS

1. Longitudinal Tracking of Students' Academic Progress using Model-based Clustering. Norliza Adnan, **Norhaiza Ahmad**, (2020) International Journal of Psychosocial Rehabilitation. Volume 24 (5). 497-505. ISSN:1475-7192. DOI: 10.37200/IJPR/V24I5/PR201714.
2. Fitting statistical distribution of extreme rainfall data for the purpose of simulation. Shahrudin, S.M., **Ahmad, N.**, Mohamed, N.S, Mahdin, H.(2020). Indonesian Journal of Electrical Engineering and Computer Science. Volume 18, Issue 3, 2020, Pages 1367-1374. ISSN: 25024752. DOI: 10.11591/ijeecs.v18.i3.pp1367-1374. Institute of Advanced Engineering and Science. (SCOPUS)
3. Assessing Dynamic-Time-Warping Dissimilarity Measures in Regionalization of River Discharges. Nur Syazwin Mansor, **Norhaiza Ahmad***, Arien Heryansyah. (2019). Malaysian Journal of Science. Special Issue 2: 14-22 DOI: <https://doi.org/10.22452/mjs.sp2019no2.2> (SCOPUS)
4. An Efficient Method To Improve The Clustering Performance Using Hybrid Robust Principal Component Analysis-Spectral Biclustering In Rainfall Patterns Identification. Shazlyn Milleana Shahrudin, Shuhaida Ismail, Siti Mariana Che Mat Nor, **Norhaiza Ahmad**. (2019). AES International Journal of Artificial Intelligence (IJ-AI). Vol. 8, No. 3, September 2019, pp. 237-243. ISSN: 2252-8938, DOI: 10.11591/ijai.v8.i3.pp237-243. (SCOPUS)
5. Modified singular spectrum analysis in identifying rainfall trend over peninsular Malaysia. S.M. Shahrudin, **N. Ahmad**, N.H. Zainuddin (2019) Indonesian Journal of Electrical Engineering and Computer Science. Vol 15; pp283-293. DOI: 10.11591/IJEECS.V15.I1.PP283-293 (SCOPUS)
6. Performance of Time-based and Non-time-based Clustering in the Identification of River Discharge Patterns, Nur Syazwin Mansor, **Norhaiza Ahmad**, Arien Heryansyah, (2018), in (ed.) Improving Flood Management, Prediction and Monitoring (Community, Environment and Disaster Risk Management, Volume 20) Emerald Publishing Limited, pp.133 – 140 (SCOPUS)
7. Identification of Rainfall Patterns on Hydrological Simulation Using Robust Principal Component Analysis. S.M. Shahrudin, **N. Ahmad**, N.H. Zainuddin, N.S. Mohamed (2018). Indonesian Journal of Electrical and Computer Science. Vol. 11. No.3. <http://www.iaescore.com/journals/index.php/IJEECS/issue/view/464> (SCOPUS)
8. Comparative Performance Of Support Vector Regressions For Accurate Streamflow Predictions. Noraini Ibrahim, **Norhaiza Ahmad**. Malaysian Journal of Fundamental and Applied Sciences. Special Issue on Some Advances in Industrial and Applied Mathematics (2017) 325-330. issn:2289-5981(WOS)
9. Spatial grouping of homogeneous river flow process in Johor. Nur Syazwin Mansor, **Norhaiza Ahmad** (2017). Malaysian Journal of Fundamental and Applied Sciences. Special Issue on Some Advances in Industrial and Applied Mathematics (2017) 405-407. issn:2289-5981(WOS)
10. Choice of Cumulative Percentage in Principal Component Analysis for Regionalization of Peninsular Malaysia Based on the Rainfall Amount. Shahrudin S.M., **Ahmad N.** (2017) Modeling, Design and Simulation of Systems. AsiaSim 2017. Communications in Computer and Information Science, vol 752. pp216-224 (2017), Springer, Singapore; doi: https://doi.org/10.1007/978-981-10-6502-6_19; isbn: 978-981-10-6501-9. (SCOPUS)
11. Short-term variability of Johor River discharge based on wavelet analysis. **N. Ahmad**, S. A. Kamaruddin, and A. Heryansyah. AIP Conference Proceedings 1643, 278 (2015); doi: 10.1063/1.4907456 (SCOPUS)
12. Effect of window length with singular spectrum analysis in extracting the trend signal on rainfall data. Shazlyn Milleana Shahrudin, **Norhaiza Ahmad** and Fadhilah Yusof. AIP Conference Proceedings 1643, 321 (2015); doi: 10.1063/1.4907462 (SCOPUS)
13. Improved Cluster Partition of Rainfall Patterns in PCA Guided Clustering, S M Shahrudin, **N Ahmad**, 3rd Comprehensive Syposium Proceeding, Risk based Asian Oriented, Integrated Water Management (2014).
14. Improved Cluster Partition in Principal Component Analysis Guided Clustering. S M Shahrudin, **N Ahmad** and F Yusof. *International Journal of Computer Applications* 75(11): 22-25, (August 2013). Published by Foundation of Computer Science, New York, USA.
15. 3-Point Pseudo-Scale Distance Measure for Measuring Indirect Proximity. Norliza Adnan, **Norhaiza Ahmad** and Maizah Hura Ahmad. Applied Mathematical Sciences, Vol. 7, (2013), no. 25, 1239 – 1247.
16. The Comparison of T-Mode and Pearson Correlation Matrices in Classification of Daily Rainfall Patterns in Peninsular Malaysia. Shazlyn Milleana Shahrudin, **Norhaiza Ahmad**, Fadhilah Yusof and XenQuan Yap. MATEMATIKA. Volume 29, Number 1c (June 2013) - Special Issue.
17. 3-Point pseudo-scale distance measure for measuring indirect indirect proximity. Adnan N., **Ahmad N.**, Ahmad M.H (2013). Applied Mathematical Sciences 7(25-28),pp1239-1247. (SCOPUS)
18. Classification of Daily Rainfall Patterns in Peninsular Malaysia during Southwest Monsoon. Shazlyn Milleana Shahrudin, **Norhaiza Ahmad**, Fadhilah Yusof. Conference Proceeding.' The 1st ISM International Statistical Conference. (2012).
19. Measuring one-to-many relationships using Pseudo-Distance in Multidimensional Scaling Techniques. Norliza Adnan, **Norhaiza Ahmad**, Maizah Hura Ahmad. Conference Proceeding.' The 1st ISM International Statistical Conference (2012).
20. Indirect Proximity Measures Using Pseudo-Distance in Multidimensional Scaling Techniques. Norliza Adnan, **Norhaiza Ahmad**, Maizah Hura Ahmad. Conference Proceeding. "Simposium Kebangsaan Sains dan Matematik ke 19 (SKSM19) (2011).
21. On the statistical analysis of the GS-NS0 cell proteome: Imputation, clustering and variability testing, **N Ahmad**, J Zhang, P J. Brown, D C. James, J R. Birch, A J. Racher, C. M Smales, Biochim Biophys Acta. (2006 Jul) ;1764 (7):1179-87 16807148 2
22. Proteomic Profiling of Statistically Significant Changes in Protein Expression in Murine Myeloma NSO Cells with Differing Antibody Productivities, **Norhaiza Ahmad**, Jian Zhang, Philip J. Brown, Elizabeth A. Sage, Daniel E. Alete, Diane M. Dinnis, Scott H. Stansfield, David C. James, John R. Birch, Andrew J. Racher and C. Mark Smales, Report UKC/IMS/04/16, IMS, University of Kent, UK., (2004). 3
23. Yusof, et al. (2009). Basic Statistics for Science & Education. Malaysia. Pearson (ISBN: 978-967-349-033-2). (contributed author: chapter: Analysis of variance).
24. Ph.D theses: *Statistical Profiling of Proteomics Data (2008)*
25. M.Sc theses: *Customer profiling for the Employment Service (2002): a short-scale research for the Department of Works and Pensions, Sheffield, UK.*

OTHER ACADEMIC PUBLICATIONS

1. Longitudinal Tracking Of Students Academic Progress Using Model Based Clustering (2019) 3rd International Conference On Educational Studies. (PROCEEDINGS)
2. Johor River Discharge Forecasting During Linggiu Reservoir Construction Period. (2018) Final Year Project Symposium 2018 (PROCEEDINGS)
3. Robust Clustering on Spatial Torrential Rainfall Patterns. Proceedings of the Third International Conference on Computing, Mathematics and Statistics (iCMS2017) (PROCEEDINGS)

BOOK CHAPTERS/ BOOK PUBLICATIONS

1. Zarina Mohd Khalid, Norazlina Ismail, Noraslinda Mohamed Ismail, Norhaiza Ahmad et al (2019). Statistics for Engineers. UTM Press. (ISBN: 978-983-52-1523-0).UTM PRESS.
2. Noraslinda Mohamed Ismail, Zarina Mohd Khalid and Norhaiza Ahmad. (2014). Chapter: Proportional Hazards Model using Frequentist and Bayesian Approaches. Statistical Modelling in Industrial and Applied Mathematics, UTM Press. (ISBN 978-983-52-0991-8).
3. Norliza Adnan, Maizah Hura Ahmad and Norhaiza Ahmad. (2014). Statistical Modeling In Industrial And Applied Mathematics. (2014) (Chapter: Measuring Indirect Proximity Using Pseudo-Distance In Multidimensional Scaling Techniques/UTM PRESS)
4. Fadhilah Yusof, Zalina Mohd Daud, Maizah Hura Ahmad, Robiah Adnan, Zarina Mohd Khalid, Arifah Bahar & Norhaiza Ahmad (2009). Basic Statistics for Sciences and Education. Prentice Hall. (ISBN: 978-967-349-033-2).
5. Ph.D theses: Statistical Profiling of Proteomics Data(2008)
6. M.Sc theses:Customer profiling for the Employment Service (2002): a short-scale research for the Department of Works and Pensions, Sheffield, UK.

GRADUATE STUDENTS, PhD: 8

1. Noraslinda M. Ismail, Jan 2011-2019. (second adviser. co-adviser: Dr.Zarina M Khalid FS, UTM)
(Successfully passed viva Dec 2018/ Convocation 2019)
2. Shazlyn Milleana Shaharudin, Jan 2011-2016. (main adviser. co-adviser: Dr.Fadhilah Yusof FS, UTM)
(Successfully passed viva 24 Nov 2016/ Convocation April 2017)
Spatial and Temporal Guided Clustering Based on Dimension Reduction
3. Zuraini Ali Shah, June 2010-Jan 2012 (second adviser. co-adviser with PM Dr.Puteh Saad FSKSM, UTM)
(Successfully passed viva April 2012/ Convocation Oct 2012)
Combination of dimenstion reduction with modified robust estimation for gene-based cancer classification.
4. Norbaiti Tukiman (**Part-Time**), Jan 2012-Present . (main adviser)
Supervised and Unsupervised Statistical Data Mining For Insurance Fraud Detection
5. Chibuike Nnamani, May 2015-Present. *Robust Plaid Model (main adviser)*
6. Noraini Ibrahim, Aug 2015-Present. *Statistical Variability Analysis of River Discharge (main adviser)*
7. Nur Syazwin Mansor, Aug 2015-Present. *Statistical Variability Analysis of River Discharge (main adviser)*
8. Norliza Adnan, Sept 2016-Present. *Model-Based Clustering in Educational Data Mining (main adviser)*

GRADUATE STUDENTS, MSc. (DISSERTATION): 5

1. Izyan Diyanah Hashim, (Sept 2015-2017) . *Variability of River Discharge and Runoff Volumes in Johor*
2. Siti Aisya Kamaruddin, (Mac 2013- Dec2013). *Temporal Flow Variability in Johor River Based on Wavelet Analysis.*
3. Ho Sui Juih, (Mac 2012- Dec 2012). *Comparison of Decision Tree Evaluation Methods in Assessing Students Performance.*
4. Nurul Shuhada Faridam, (Dec 2009-Dec 2011) . *Classification of Daily Rainfall Patterns in Peninsular Malaysia based on Rice Cultivation*
5. Nurul Akmal Md Nasir, (Jan 2011-Dec 2011) . *Statistical profiling of schools in Malaysia based on PMR result performances*

UNDERGRADUATE STUDENTS, B.Sc. PROJECTS (SELECTED): 17

1. Huda Wardiah Mohd Effandie (Sep 2019-2020). Measuring Change Detection in Medical Images
2. Farah Syahirah Mior Othman (Sept 2017-2018): Forecasting River Discharge Data using Support Vector Regression
3. NurAinaa Syaza Rushdan (Sept 2017-2018): Forecasting Rainfall Data using Support Vector Regression
4. Amirah Farzanah Sulaiman (Sept 2016-2017): Testing for Non-Linear Time Series Data
5. Armaeni Agus (Sept 2015-2016): Clustering in financial time series data. (*Special Program UTM-KENT*)
6. Nor Hidayah Hasan (2014-2015): Statistical Characteristics of River Discharge Runoff in Johor.
7. Norlyana Farahana Noor Azmi (2014-2015): Statistical Characteristics of Rivers in Johor.
8. Husna Nuraiin Hamidi, (2013-2014): Robust Linear Regression: a simulation study
9. Norlyana Farahana Noor Azmi (2014-2015): Statistical Characteristics of Rivers in Johor.
10. Nurul Izzaty Mohd Yunus, UTM (2011-2012): *Analysis of Sungai Galing Water Quality Data Through PCA.*

EXAMINERS (Postgraduate Research)

External:

- (1) MSc (University Utara Malaysia): Long Mei Mei (Feb 2016)
- (2) PhD (Universiti Utara Malaysia): Hashibah Hamid (June 2013)

Internal:

- (1) PhD (Universiti Teknologi Malaysia): Mohd Zulariffin Md Maarof (Aug 2018).
- (2) MSc (Universiti Teknologi Malaysia): Nor Hidayah Ismail (Jul 2014)
- (3) PhD (Universiti Teknologi Malaysia): Aishah Mohd Noor (Nov 2013).

INVITED ACADEMICS

- **Discussant.** 62nd ISI World Statistics Congress (WSC) ISI2019 Kuala Lumpur, Malaysia. 18-23 Aug 2019.
- **Invited Speaker.** International Seminar on Mathematics in Industry 2017. Johor Bahru 1-2 Aug 2017.
- **Invited Speaker.** 61st ISI World Statistics Congress (WSC) ISI2017 Marrakech, Morocco. 16-21 July 2017.
- **Invited Speaker.** 10th Malaysian Institute of Statistics National Seminar (SKismX), Universiti Putra Malaysia. 18 Feb 2016.
- **Visiting Scientist.** Japan Society for the Promotion of Science (JSPS) Asian Core Program. Kyoto University. 18-22 November 2015.
- **Invited Speaker.** Seminar Kebangsaan Institute Statistik Malaysia ke-IX (ISM-IX, Universiti Kebangsaan Malaysia. 31 Mac 2015.

TEACHING COURSES

UTM Full Time Courses	Level	UTMSpace Part Time Courses	Level
1. Multivariate Statistical Analysis SSCM3123	BSc.	1. Engineering Statistics SSE2193	BSc.
2. Computer Literacy SSCM1303	BSc.	2. Statistics I SSE1113	BSc.
3. Engineering Statistics SSCE2193	BSc.	3. Kebarangkalian & Statistik DSM2703	BSc.
4. Statistics I SSE1113	BSc.	4. Multivariate Statistical Analysis SSCM3123	BSc.
5. Financial Mathematics SSH3863	BSc.		
6. Calculus I SSE1792	BSc.		
7. Generalized Linear Model MSM1453	MSc		

MAIN INSTRUCTOR/INVITED SPEAKER ON R SOFTWARE

1. Make Prediction With R (2019)
2. Getting Started With R (2018)
3. Getting Started With R (2017)
1. Invited Speaker, "Make Data Speak" at Big Data Concepts, Theories and Applications Seminar, organised by the Advanced Integrated Development Plan, UTM (2017).
2. Invited Instructor. R for Data Analysis: an alternative to SPSS (2015). UiTM Pasir Gudang.

ADMINISTRATIVE APPOINTMENTS (SELECTED)

- **Director, Career Carnival at the Faculty of Science (Oct 2019-Mac2020)**
- **UTM Committee member: Mentoring for Excellence (JKM4E) (Feb 2020-present)**
- **Double degree UTM-Kent Coordinator: (2019-present)**
- **Department Coordinator: Mathematics Computer Labs (2014-present)**
 - To manage mathematics lab, its facilities and lab officers and technicians
 - To plan and manage the procurement of lab equipments for mathematics computer labs.
- **WebMaster - Department of Mathematical Sciences, Faculty of Science, UTM (2011-present)**
- **WebMaster - Faculty of Science, UTM (Nov 2013-2016)**
- **Chief Editor: Forum Matematik (2012- 2014)**
 - Department of Mathematical Sciences, Faculty of Science, UTM
 - To publish a fortnightly newsletter on news, developments, publications related to the department.
- **Faculty Coordinator: Young Excellent Scientists for Faculty of Science (2013)**
 - To manage programs for excellent undergraduate students leading to academic research.

AWARDS AND ACHIEVEMENTS

- Anugerah Cemerlang (Pembangunan Pelajar) Di Jabatan Sains Matematik UTM 2018 (Received 2019)
- Anugerah Khas Dekan 2017 (Received 2018)-
- *Award of Excellent, Active Blended Learning Course Semester 1 2018/2019, Semester 2 2017/2018, Semester 2 2015/2016*
- Anugerah Sumbangan Cemerlang Di Jabatan Sains Matematik UTM 2013 (Received 2014)
- Sijil Penghargaan Salah Seorang Pensyarah Paling Aktif Dalam Penggunaan e-Pembelajaran di UTM Semester 1 2013/2014
- Anugerah Citra Karisma UTM 2012
- Pencapaian cemerlang dalam perkhidmatan cuti belajar, Fakulti Sains UTM 2006 (Received 2008)
- Third year Mathematics, Statistics & Operational Research Course, Prize of the Institute for the session, UMIST 1995/1996.