Dr. Jyotsna Talreja Wassan

Assistant Professor

Maitreyi College, University of Delhi, New Delhi 110021, India

jtwassan@maitreyi.du.ac.in
https://sites.google.com/view/jtwassan/home
Jyotsna Talreja Wassan - Google Scholar

Enthusiastic to live my dream of leading in research and teaching related to computational approaches leveraging meaningful modeling, analysis and visualization of data solving real-world problems .

PROFILE

An academician with more than 13 years of combined experience in teaching and research. A software developer with a year-long experience in the IT industry. Great educational background. Recipient of prestigious Research Challenge Fund Scholarship, ulster university, U.K. and Marie Curie fellowship grant under European Commission Horizon 2020 at the doctorate level research studies. An active researcher with papers published in peer-reviewed academic journals. Earned "Outstanding Thesis Award" for PhD. I believe in continuous learning as a knowledge disseminator. Strive to embrace meaningful and successful educational experiences.

WORK EXPERIENCE

13 Years

November 2010- Present

Maitreyi College, University of Delhi, INDIA

Title: Assistant Professor (SELECTION GRADE, LEVEL III) (Permanent basis) of Computer Science

- Iam teaching and training graduate-level students in Computer Science subjects like Data Mining, Programming Languages (R/Python), Scripting, Operating Systems, Computer Networks, Data Science, Database Management Systems, Data Structures, and Cyber Security and Laws.
- Teacher-In-Charge of the Dept. of Computer Science for the year 2023-2024, 2020-21 and 2015-16.
- Convenor of admissions to the college 2020-2021,2021-2022
- Member of various committees such as Time Table/Computerization, cultural committees such as Indian Dance, Western Dance, etc.
- Member of the Advisors of Student Union for the academic year 2013-14, 2016-2017.

- Paper evaluator and paper setter for various computer science subjects.
- External and Internal Examiner for conducting practical examinations.
- Served as Head Examiner/Convenor for various papers under BSc/ B.A undergraduate courses, University of Delhi, INDIA.
- Involved in Curriculum Designing and Paper Settings for various Computer Science courses. Served as constituting member of the team members in designing curriculum for papers on Operating Systems and Networks for Discipline courses under B.Tech. Computer Science (FYUP), University of Delhi, INDIA.

September 2016- March 2020
Ulster University, Northern Ireland, United Kingdom

Title: Research Scholar (on Academic Leave from University of Delhi)

I completed my doctoral research in the area of **Integrative computational analysis for Meta-genomics at the Ulster University**, Northern Ireland, United Kingdom on the **Research Fund Horizon 2020 scholarship granted for three years by the Ulster University, United Kingdom**. I rounded off my academic journey further by getting funding from the **Marie Curie fellowship under Research and Innovation Staff Exchange (RISE) Scheme for the Meta-plat project**, which focused on analyzing microbial genomes for improving the nutritive value and cattle productivity in European boundaries under the **European Horizon Commission 2020 project call.** I actively participated in joint research, secondment and innovation activities between the member organizations of this project in the U.K. and Ireland. I also participated in research development activities at Ulster University, United Kingdom.

August 2009 - November 2010

Acharya Narendra Dev College, University of Delhi, INDIA (Adhoc basis)

Title: Assistant Professor of Computer Science

Subjects taught at under-graduate level - Programming languages such as C++, Java, etc., Operating Systems, Data structures, etc. ALso, Involved in various activities such as making time tables, Spic Macay, Cultural events committee, Departmnetal festivals, etc.

August 2009 - November 2010

Visiting Faculty, Department of Computer Science University of Delhi, India

Subject taught at Postgraduate level – Operating Systems and Data Mining under Master of Computer Application (MCA), Course

July 2008 – August 2009

St Microelectronics Pvt. Limited, Greater Noida, INDIA

Title: Software Engineer in Company Infrastructures and Services

GRADE: IT Solutions: Software ENGINEER I Handled the coding and testing of the post sales management module of StMicroelectronics. Worked on Falcon Project.

EDUCATION

PhD Computer Sc.	PhD, Ulster University, United Kingdom	September 2016- March 2020
M.Sc. Computer Sc.	Department of Computer Science, University of Delhi, INDIA	July 2006- July 2008
B.Sc. Computer Sc.	Indraprastha College for Women, University of Delhi, INDIA	July 2003- July 2006

SKILL EXPOSURE

- Programming & Scripting (Python/R/C++/Perl)
- Operating Systems (Linux/Windows)
- Data Analysis using Machine Learning Approaches

AWARDS

- **Global Eminent Academician Award (2023)**, European Council for higher education and Accreditation, United Kingdom.
- Award for **Outstanding Thesis (2020-2021), by Ulster University**, United Kingdom.
- Esteemed **ESDA Young Scientist Award, World Environment Summit** 2021.
- **Research Strategy Challenge Fund Scholarship** (2016-2019) for pursuing PhD @ Ulster University, U.K.
- Esteemed **Marie Curie Fellowship Grant** during project secondments of MetaPlat Project 2016-2020 under European Horizon Project Call 2020.
- Received **Research Grant for travel and accommodation by the Natural Environment Research Council (NERC)** to attend NERC Metagenomics Workshop 2017, held in University of Liverpool, United Kingdom.

- Awarded **Silver Recognition** for extraordinary excellence, dedication, commitment and excellent delivery and acceptance of the **project Falcon** @ ST Microelectronics Pvt. Ltd., INDIA.

CERTIFICATIONS

- Post Graduate **Certification in Management**, IGNOU, New Delhi, INDIA, 2009
- Certification for **Google Cloud Identity training**, Coursera, 2020
- **Certified digital teacher -2020** by ICT Academy, Government of Tamil Nadu, INDIA
- Completed teacher training Course on " *An Introduction to Learning, Teaching and Assessment for Postgraduate Tutors and Demonstrators*", Ulster University, United Kingdom, December 2016
- **Research Integrity Course**, Ulster University, United Kingdom, 2016
- **Machine Learning** (through Coursera)
- **R Programming** (through Coursera)
- **UGC NET** (University Grant Commission National Eligibility Test) with **JRF** (Junior Research Fellowship),2010

PUBLICATIONS

I am a young researcher and authored several publications. I am also serving as reviewer of the research submitted to IEEE/ACM Transactions on Computational Biology and Bioinformatics and other reputed conferences such as IEEE- BIBM (2018-2023).

JOURNALS

Wassan, J.T., Wang, H. and Zheng, H., 2023.T. Developing a new Phylogeny-driven Random Forest Model for Functional Metagenomics, IEEE Transactions on Nanobioscience

Wassan, J.T., Ghuriani,V. et al, 2023. An Integrative Approach Towards Recommending Farming Solutions for Sustainable Agriculture, Journal of Experimental Biology and Agricultural Sciences 11(2):306-315 DOI:10.18006/2023.11(2).306.315

Wassan, J.T., Zheng, H. and Wang, H., 2021. Role of Deep Learning in Predicting Aging-Related Diseases: A Scoping Review. Cells (Impact Factor 6.6), MDPI, 10(11), p.2924.

Krause, T., Wassan, J.T., Mc Kevitt, P., Wang, H., Zheng, H. and Hemmje, M., 2021. Analyzing large microbiome datasets using machine learning and big data. BioMedInformatics, 1(3), pp.138-16**5.**

Wassan, J.T., Wang, H., Browne, F., and Zheng, H., 2019. Phy-PMRFI: Phylogeny-aware Prediction of Metagenomic Functions using Random Forest Feature Importance. IEEE transactions on Nano bioscience (Impact Factor 2.9).

Wassan, J.T., Wang, H., Browne, F., and Zheng, H., 2019. A comprehensive study on predicting the functional role of metagenomes using machine learning methods. IEEE/ACM Transactions on Computational Biology and Bioinformatics (TCBB) ((Impact Factor 3.71), 16(3), pp.751-763

Wassan, J.T., Ghuriani,V.,2021.Analyzing the Effect of Environmental and Demographic Factors on COVID-19 Spread in India Using Statistical Methods: A Case Study.Applied Ecology and Environmental Sciences.9(2),pp.177-185

Wassan, Jyotsna Talreja. "Discovering big data modeling for the educational world." Procedia-Social and Behavioural Sciences, 176 (2015): 642-649, ELSEVIER.

Wassan, Jyotsna Talreja. "Modeling stack framework for accessing electronic health records with big data needs." International Journal of Computer Applications 106.1 (2014): 37-45.

Wassan, Jyotsna Talreja. "Exploratory Implementation of Stream Clustering Algorithm using MongoDB." International Journal of Computer Applications 121.10 (2015).

Bedi, Punam, Harmeet Kaur, Bhavna Gupta, Jyotsna Talreja, and Mansi Sood. "A Website Recommender System Based on an Analysis of the User's Access Log." Journal of Intelligent Systems 18, no. 4 (2009): 333-352.

CONFERENCES

Wassan, Jyotsna Talreja, Haiying Wang, and Huiru Zheng. "A New Phylogeny-Driven Random Forest-Based Classification Approach for Functional Metagenomics." 2022 IEEE International Conference on Bioinformatics and Biomedicine (BIBM). IEEE, 2022.

Wassan, J.T., Zheng, H., Wang, H, Browne, F., Walsh, Manning, Roehe, R., Dewhurst, R., 2019, November. A Phylogeny Aware feature ranking for classification of Cattle Rumen Microbiome. In DAM Workshop, 2019 IEEE International Conference on Bioinformatics and Biomedicine (BIBM) (in press) IEEE.

Wassan, J.T., Wang, H., Browne, F., and Zheng, H., 2018, December. PAAM-ML: A novel Phylogeny and Abundance aware Machine Learning Modeling Approach for Microbiome Classification. In 2018 IEEE International Conference on Bioinformatics and Biomedicine (BIBM) (pp. 44-49). IEEE.

Wassan, J.T., Zheng, H., Browne, F., Bowen, J., Walsh, P., Roehe, R., Dewhurst, R., Palu, C., Kelly, B. and Wang, H., 2018, December. An Integrative Framework for Functional Analysis of Cattle Rumen Microbiomes. In 2018 IEEE International Conference on Bioinformatics and Biomedicine (BIBM) (pp. 1854-1860). IEEE.

Wassan, J.T., Wang, H., Browne, F., Wash, P., Kelly, B., Palu, C., Konstantinidou, N., Roehe, R., Dewhurst, R. and Zheng, H., 2017, August. An integrative approach for the functional analysis of metagenomic studies. In the International Conference on Intelligent Computing (pp. 421-427). Springer, Cham.

Wassan, J.T., Wang, H., Browne, F., and Zheng, H., 2017, August. Microbial abundance analysis and phylogenetic adoption in functional metagenomics. In 2017 IEEE Conference on Computational Intelligence in Bioinformatics and Computational Biology (CIBCB) (pp. 1-8). IEEE.

Manning, T., Wassan, J.T., Palu, C., Wang, H., Browne, F., Zheng, H., Kelly, B., and Walsh, P., 2018, December. PhylogenyAware Deep 1-Dimensional Convolutional Neural Network for the Classification of Metagenomes. In 2018 IEEE International Conference on Bioinformatics and Biomedicine (BIBM) (pp. 1826-1831). IEEE.

Walsh P, Palu C, Kelly B, Lawor B, Wassan J.T., Zheng H, Wang H. A metagenomics analysis of rumen microbiome. In2017, IEEE International Conference on Bioinformatics and Biomedicine (BIBM) 2017 Nov 13 (pp. 2077-2082). IEEE.

Zheng, H., Wassan, J.T., Moisescu, M.A., Stoicu-Tivadar, L., Miranda, J., Crisan-Vida, M., Sacala, I.S., Badnjevic, A., Chorbev, I. and Jakimovski, B., 2018, December. Multiscale Computing in Systems Medicine: A Brief Reflection. In 2018 IEEE International Conference on Bioinformatics and Biomedicine (BIBM) (pp. 2190-2195). IEEE.

Talreja, Jyotsna, et al. "Using Web Mining to Generate Recommendations: A Website Recommender." IICAI. 2009.

BOOKS

Co-Author of the book "IT Tools Level-3", Class XI Standard Handbook CBSE, ISBN: 978-81-929704-20-2.

Author of Book titled "Practicing Programming Fundamentals using C++ Constructs" published with Pustak Mahal, 2015. (ISBN: 9788122315677)

BOOK/ENCYCLOPEDIA CHAPTERS

Wassan, J.T., Wang, H. and Zheng, H., 2018, Machine Learning in Bioinformatics. In Encyclopaedia of Bioinformatics and Computational Biology (pp 300-308), Elsevier.

Wang H, Wassan, J.T., and Zheng, H., 2018. Measurements of Accuracy in Biostatistics. In Encyclopedia of Bioinformatics and Computational Biology (pp. 685-690). Elsevier.

Wassan, Jyotsna Talreja. "Big Data paradigm for healthcare sector." Big data: Concepts, methodologies, tools, and applications. IGI Global, 2016. 570-587

Wassan, Jyotsna Talreja. "Emergence of NoSQL Platforms for Big Data Needs." Encyclopedia of Business Analytics and Optimization. IGI Global, 2014. 787-798.

Wassan, J.T., 2019. Adapting Big Data Ecosystem for Landscape of Real World Applications. In Advanced Methodologies and Technologies in Network Architecture, Mobile Computing, and Data Analytics (pp. 1-14). IGI Global.

Contributed e-Lessons and e- Quizzes for Institute of LifeLong Learning, University of Delhi, INDIA. on Discrete Structures: Asymptotic Notations and Trees.

INTERNATIONAL PRESENTATIONS

- "An integrative approach for the functional analysis of metagenomic studies". Paper presented **at 13th International Conference, ICIC 2017, Liverpool, UK, August 7-10, 2017.**

- "Microbial abundance analysis and phylogenetic adoption in functional metagenomics", Paper presented at IEEE Conference on **Computational Intelligence in Bioinformatics and Computational Biology (CIBCB) , Manchester, UK, 2017.**

- **3MT (3 Minutes Thesis) Presentatio**n at Ulster University, United Kingdom

- **Big Data Analytics for Sports Management -** e-Lecture at Birmingham City University, United Kingdom

RESOURCE PERSON/ CONVENOR/ ORGANIZER

- Convenor of **Webinar on AI and its applications 2023**, Maitreyi College, University of Delhi, India.
- Resource Person for the Course on **ICT Tools and Techniques** for undergraduate students in Maitreyi College, University of Delhi,INDIA.
- Convened **Online Certificate Course in CYBER SECURITY** (30 hours) held from 3 October - 30 October 2021, Maitreyi College, University of Delhi, INDIA.
- Session Chair for the session on **Applications of AI in 11th INTERNATIONAL ADVANCED COMPUTING CONFERENCE -2021,** Springer
- Convenor and Resource person for One Week National Faculty Development Programme on "**Digital Pedagogy to Enhance Teaching & Learning Experience**'' organized by Maitreyi College in association with GAD-TLC, SGTB Khalsa College, under MOE Govt. of India (PMMMNMTT) from 15 - 21 December, 2020. Developed e-content for the same.
- Served as **Reviewer (Book Proposal) on Phylogenomics**, Elsevier | Research Reference Content , 50 Hampshire Street, 5th Floor, Cambridge, MA 02139 USA, 2021.
- Member, Organizing Committee of the National Webinar on **"Machine Learning and it's Applications'** ' on 21 August 2021, organized by Department of Computer Science, Maitreyi College, University of Delhi.
- Organizing Committee member for power seminar on **"Employability Skills for the Future"** organized by the Department of Computer Science, Maitreyi College, University of Delhi in collaboration with the ICT academy on 18th September 2021.
- Convenor and Resource person for **4-week Faculty Training Program on Google Applications organized by Dept. of Computer Science, Maitreyi college** from 16 July - 14 Aug 2020.
- Organizer of an **International Webinar on Network-based approaches for Integrative Analysis** with Prof. Huiru Jane Zheng, a speaker invited from Ulster University, United Kingdom on 24 July 2020, Maitreyi College, University of Delhi, INDIA

- Resource person in **TechnoUpdate 1.1- Online workshop on Google Drive & Sheets held on 11-12 May 2020** for the Non-Teaching Staff of Maitreyi College.
- Resource Person for **UK-INDIA joint UKIERI-SIP (2013-14) study program**.

EVENTS ATTENDED

- Successfully completed **One--Week FDP on Advanced Pedagogical Techniques, July 2023.**
- Successfully completed Online **Two-Week Refresher Course in Computer Science** conducted by the TLC, Ramanujan College, University of Delhi, INDIA sponsored by Ministry of Education (PMMMNMTT) from 02.05.2022 -16.05.2022.
- Attended Webinar on **Cyber Hygiene for Virtual Teaching Platforms**, October 2021, organized by Maitreyi College, University of Delhi.
- Successfully completed **One week workshop on Research Methodology** conducted by CPDHE, University of Delhi, INDIA. 10.09.2020-16.09.2020 .
- Successfully completed **Two Weeks Faculty Development Program on Managing Online Classes and Co-creating MOOCs,** (Teaching Learning Center, Ramanujan College, University of Delhi, INDIA, under the aegis of MHRD, PMMMNMTT) 20.04.2020 - 06.05.2020.
- Successfully completed **One Week Faculty Development Program on Open-Source tools for research,** (Teaching Learning Centre, Ramanujan College, University of Delhi, INDIA, under the aegis of MHRD, PMMMNMTT, 08.06.2020-14.06.2020.
- Participated in the Webinar on "**How to write research papers"** organized by ICT academy on 29 May 2020.
- Attended webinar on **National Education Policy : Futuristic Policy** of New India, 25 August 2020,University of Delhi, INDIA.
- Attended FDP on "**Moodle: Learning Management System", May 2020** organized by G. Y . Pathrikar College of Computer science and Information Technology, MGM University, Aurangabad, Spoken Tutorial Project, IIT Bombay.
- Completed One Week Course on **Digital Teaching Techniques organized** by ICT Academy, INDIA, June 2020..
- Attended Webinar session on **The Economics of The Pandemic** arranged by Tata MacGrahall publications, May 2020.
- Attended webinar on **Randomized and Approximation Algorithms**, Oxford Press, May 2020.
- Attended **MetaPlat Workshop**, April 2019,, CIT, Cork, Ireland.
- Attended online session on Online Session on **The importance of model fairness and interpretability in AI systems**, organized by Microsoft, 25 May 2020.

- Attended several **research workshops** at Ulster University, United KIngdom, 2016-2019
    - Preparing to Submit Your Thesis
    - Getting Through the Final Year of Your PhD: The Final Push
    - Design your Life
    - Thesis Producer
    - Care to Write: Writing in the Middle of Your PhD
- Attended Faculty Development Program on Digital India, ANDC, University of Delhi, 11 April 2016.
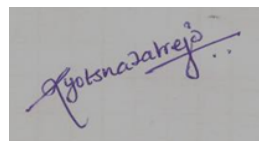
- Attended National Seminar on A **step towards soft computing**, UGC sponsored, University of Delhi, INDIA, 18-19 March 2016.
- Attended **Robotics workshop**, 31 March 2016, Maitreyi College, University of Delhi,INDIA.
- Participated in the **Refresher Course – Computer Science** organized by CPDHE, University of Delhi in December 2013.
- Actively participated in organizing **UK-India Education and Research Initiative - Study India Programme (UKIERI-SIP) 2013 in Maitreyi College.**
- Attended workshop on **Foundation Course – Information Technology** organized by CPDHE, University of Delhi in 2013.
- Participated in the **Orientation Programme (OR-70) held at CPDHE,** University of Delhi held in June-July 2012.
- Participated in the **National Conference on "Knowledge Management"** organized by Management Development Research Foundation in May 2011.
- Attended a workshop on "Bioinformatics" organized by Maitreyi College in Feb' 2011

RESEARCH PROJECTS MENTORED

- May-Jul 2020 Summer Internship Programme (4 students) B.Sc Physical Science with Computer Science at Maitreyi College University of Delhi, India Title: "**Exploring Data Science to Study Viral pandemic of COVID-19 in 2020**."
- Apr-Jun 2021 Summer Internship Programme (4 students) B.Sc (H) Economics, B.A. with Computer Applications at Maitreyi College University of Delhi, India Title: "**An Integrative Approach towards Recommending Farming Solutions for Sustainable Agriculture**". **The Summer project won first prize for its presentation.**

RESEARCH AREAS

Machine Learning, Data Science, Big Data Analytics, Computational Biology, Metagenomics

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