Dr. Majeed Jamakhani

Bioinformatician
ULG, Belgium

AWARDS/ ACHIEVEMENTS

Department of Biotechnology (DBT) Travel Grant Award for USA, Government of India (2015)

UGC-SAP fellowship grant , Govt of INDIA (GoI) (2013)

Qualified with 91.6 percentile in Graduate Aptitude Test in Engineering (GATE)and an all India rank of 1225 (2012)

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📍 Molecular and Cellular Epigenetics Interdisciplinary Cluster for Applied Genoproteomics .
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WEB-APP

🌐 https://mjanalysis.shinyapps.io/OTU_visualization1/

🌐 https://user-images.githubusercontent.com/109467732/188334901-10b2a025-aba2-484e-a094-adab0e418827.mp4

GITHUB

https://github.com/MJBioInfo

OVERVIEW

Bioinformatician with academic and research expertise in Omics analysis(Single cell & Bulk), Spatial, scTCR, Multiomics analysis, 16s/metagenomics, Biostatsitics, Machine and Deep learning, Image processing, drug design, protein modelling , Docking and WebApp development and sound programming knowledge in python and R.

Work Experience - 7 Years		Publications	
Research	3.5	Articles	11
		Books	01
Academic	3.5	Conference abstract	03
		Impact Factor : 47	

SKILLS SUMMARY

- •••• NGS Analysis: Single cell, Bulk, Chipseq, Variant, Multiomics, Spatial , ATAC, Metagenomics, Proteomics
- •••• R, Python, Linux, Bash, Peptidomics, MS analysis
- •••• Machine Learning, Deep learning, Tensorflow in Cancer and Bioactive compound discovery
- ••• Drug design and discovery: CADD , QSAR, Docking, Simulation, DTI (Drug Target Interaction)
- ••• WebApp development and Database Management : Rshiny, Streamlit, SQL
- •••• Workflow management : Snakemake, Nextflow
- •••• Cloud Computing, HPC cluster computing : Slurm, GCP, Docker

EXPERIENCE

Bioinformatician (Post-Doc)

GIGA research center, ULG, Belgium| SEPT 2019 - present

As a Big Data Analyst in GIGA research center, University of Liege, I got an unique opportunity to work with clinical data in various cancer projects . Where i contributed in following projects through computaional and AI skills to explore novel biomarkers for diseases.

#Project-1
Role of TGFA in chemoresistance of malgnant mesothelioma

Applied computational techniques on TCGA and GEO datasets and analysed in order to gain information on differential expression of various targets specific to malignant mesothelioma cancer. My responsibilities included:

- Coordinated with other project members to design the experiment and developed computational pipeline to analyse transcriptomic and clinical data from different datasets
- Applied R and python programming and various computational tools to decipher the role of TGFA in chemoresistance . This revealed the over expression of TGFA desensitized MPM cells to the apopotosis .
- Drafted scientific manuscript and presented data analysis on various meetings.

#Project-2
Machine Learning and Deep learning model development in microbiome and Bioactive peptide discovery.

- Used state-of-art machine learning and deep learning models to identify important microbiome among diabetic and non diabetic patients.
- Build Machine learning and deep learning models to predict bioactive peptides from food source

#Project-3
Single cell analysis of Anaplastic thyroid cancer dataset to understand effect on DNA damage repair pathway. My responsibilities included:

- Performing robust data quality control and validation of 10X chromium single cell dataset. Developing pipeline to analyse single cell dataset by using best practices using R and Python programming
- Peform Differential cluster analysis of ATC , PTC and Normal thyroid samples which helps the project to make progress.

#Project-4
Development of multi-epitope chimeric vaccine against Taenia solium

Applied immunoinfomatics on candidate molecules and simulation techniques with Toll-like receptors (TLRs) to decipher stable interactions between construct and TLRs. My responsibilities included:
- Coordinated with collaborators and exchanged scientific views to design the project and probable candidates of Taenia solium for the vaccination using immune-omics approach
- Performed Docking screening and setup the Deshmond module for simulation analysis
- Clarified the collaborator how simulation eventuated the stable poses and strong binding of subunit vaccine with TLRs. Project hypothesized that chimeric vaccine could stimulate humoral and cellular responses and defence against taeniasis.

#Project-5
Cytotoxic activity of macrophage-associated MPM tumors

Wide range of phenotypes between classical M1 that mediate antitumor activity and M2 that support peripheral tolerance and tissue repair. However, macrophages in MPM tumors do not correspond to these extreme phenotypes but, instead, are shaped by local inflammatory mediators released in the pleura. . My responsibilities included:
- Analyzed Luminex protein expression and RNAseq of M1, M2 and PE macrophages to findout factor that mediate immune editing activity .
- Performed cell-cell interaction analysis between different macrophages with different cancer cell lines
- Build , Optimized and validated Deep learning models and stacked models to classify killing pattern of macrophages.

#Project-6
Epigenetic silencing of HTLV-1 expression by the HBZ RNA

Finding role of HLTF in HTLV-1 infection by   My responsibilities included:
- performing Microarray, RNAseq, Chipseq and Public protein datasets to findout the level of HLTF in HTLV-1 infected patients..

Lecturer (Python Programmer)

Institute of Chemical Technology, INDIA | Nov 2018 - Aug 2019

- During my teaching writtena Python Script to sense moisture content in soil using Raspberry pie and also developed code to convert sound energy to light energy.
- Taught Python and applications of Raspberry pie and mentored the student with projects.

Assistant Professor (Bioinformatics)

TKIET, Warananagar, INDIA| AUG 2009 - JAN 2013

- Taught various Biotechnology subjects like Bioinformatics, Immunology to B.tech students
- Guided Bioinformatics projects and mentored B.Tech students.

PhD (Food Biotechnology)
Institute of Chemical Technology, INDIA | | Jan 2013 - Nov 2018

Implemented molecular and computational techniques to isolate and characterize allergens associated to INDAM tomatoes. During my dessertation performed following tasks:
- Applied various molecular techniques like SDS PAGE, Immunoblotting to characterize allergens from INDAM tomatoes.
- Implemented cloning techniques to amplify the highly stable allergen LTP3 in our study
- Applied various computational techniques like epitope identification , protein modelling, Docking and Desmond simultaion to gain insight on residues involving in type 1 hypersensitivity reaction.

PUBLICATIONS

- A Beauvois, H Gazon, PS Chauhan, **M Jamakhani** et al . The helicase-like transcription factor redirects the autophagic flux and restricts human T-cell leukemia virus type 1 infection. Proceedings of the National Academy of Sciences (PNAS). 120(31). https://www.doi.org/10.1073/pnas.2216127120

- M Willems, A Scherpereel, E Wasielewski, J Raskin, Hélène Brossel, Alexis Fontaine, Mélanie Grégoire, Louise Halkin, **Majeed Jamakhani,** Malik Hamaidia, Luc Willems. Excess of blood eosinophils prior to therapy correlates with worse prognosis in mesothelioma. in Frontiers in Immunology. 14, 981. https://doi.org/10.3389/fimmu.2023.1148798

- Clotilde Hoyos, Alexis Fontaine, Jean-Rock Jacques, Vincent Heinen, Renaud Louis, Bernard Duysinx, Arnaud Scherpereel, Eric Wasielewski, **Majeed Jamakhani**, Malik Hamaidia, Luc Willems. HDAC Inhibition with Valproate Improves Direct Cytotoxicity of Monocytes against Mesothelioma Tumor Cells. in Cancers. 14(9), 2164. 2022 . https://doi.org/10.3390/cancers14092164

- Hélène Brossel, Alexis Fontaine, Clotilde Hoyos, **Majeed Jamakhani,** Mégane Willems, Malik Hamaidia, Luc Willems. Activation of DNA Damage Tolerance Pathways May Improve Immunotherapy of Mesothelioma. in Cancers , 13(13), 3211 . 2021. https://doi.org/10.3390/cancers13133211

- Staumont Bernard , **Jamakhani Majeed ,** Costa Chrisostome et al TGFα Promotes Chemoresistance of Malignant Pleural Mesothelioma. in Cancers. 12(6), 1484. 2020

- R Kaur, N Arora, **MA Jamakhani,** S Malik, P Kumar, F Anjum, S Tripathi. Development of multi-epitope chimeric vaccine against Taenia solium by exploring its proteome: an in silico approach. Expert Review of Vaccines. 19 (1), 105-114. 2020

- **Majeed Jamakhani,** Prof. S. S. Lele, Bhagwan Rekadwad. In silico assessment data of allergenicity and cross-reactivity of NP24 epitopes from Solanum lycopersicum (Tomato)fruit. Data in Brief, Elsevier, 21, 660-674. 2018

- **Majeed Jamakhani,** S. S. Lele, Tomato allergy A review on allergens and therapy. ISSN 0976-2612, Vol-8, Issue-4, 2261-2273. 2017

- **Majeed Jamakhani,** S. S. Lele, Allergenic study and epitope analysis of Indo-American hybrid Tomatoes International Journal of Advanced Biotechnology and Research . ISSN 0976-2612, Vol-7, Issue-3, 1025-1036. 2016

- Dalvi Vivek Suresh, Naik Rohit Girish, Bagwan Jamir Dilawar, Shinde Suraj Jayaram and **Jamakhani Majeed** Catechin and Quercetin ligand based analysis against peanut allergy using computational studies. International Journal of Advanced Biotechnology and Research. ISSN 0976-2612, Vol 6, Issue2, 175-188. 2015

- **M.A.Jamakhani,** M. R. Jadhav,G. S. Kamble, V. R. Gambhire (2011). Nanometrology in Biological and Medical Sciences. International Journal of Advanced Biotechnology and Research. ISSN 0976-2612, Vol 2, Issue 1, 213-223. 2011

CONFERENCE ABSTRACT(SELECTED)

- M Hamaidia **M Jamakhani,** JR Jacques, et al . Resistin mediates the immunoediting activity exerted by primary human macrophages towards mesothelioma cells. American Association for cancer research (AACR). 83(7). 663. https://doi.org/10.1158/1538-7445.AM2023-663

- Florent Porquet, L Weidong, K Jehasse, H Gazon, S Blacher, **M Jamakhani,** et al.. Highly efficient and specific DMPK promoter inhibition by CRISPRi in DM1 patient-derived myotubes. MDF Annual Conference, Sep 2021

BOOK CHAPTER

- Azza Silotry Naik, **Majeed Jamakhani,** Madhavi R Vernekar, SS Lele. Animal-and Plant-Based Food for Health and Longevity. Nutrition, Food and Diet in Ageing and Longevity. 155–177. 2021.

- Ph.D Food Biotechnology , Institute of Checmial Technology (ICT), Mumbai , India, 2013-2019
  Thesis title: Study on isolation and characterization of allergens of various varieties of Tomatoes in India

- Master of Technology (Bioinformatics), SASTRA university, India, 2007-2009

- Bachelor of Technology (Biotechnology), GMIT Institute, India, 2002- 2006

CO-CURRICULAR / ADMINISRATION

- Coordinator, National DST_EAC meeting by Department of Science and Technology (DST), Gov of India.
- Coordinator, Industry -Academy meet (IA-meet) by DST policy research , Gov of India.
- Coordinator, DBT-FIST program-2014, DST, Govt of India.
- Training and Placement Coordinator of Dept of Biotechnology, TKIET Warananagar, Kolhapur, Maharashtra.
- Exam Coordinator at Dept of Biotechnology, TKIET, Warananagar, Kolhapur, Maharashtra.
- Class Coordinator at Dept of Biotechnology, TKIET warananagar, Kolhapur, Maharashtra.
- Worked as a sub-coordinator of National Broad of Accreditation at Dept of Biotechnology, TKIET warananagar,India.

CONFERENCES/WORKSHOPS

- Participated in Proceedings: AACR Annual Meeting 2023 at Orlando, Florida, USA, 2023
- Patricipated in International workshop on Food allergen control organized by farrp at NIFTEM,Haryana,India. 2015
- Technical Abstract selection with ID:008 and Poster presentation in IFT15 conference, Chicago, Illinois, Food chemistry Division. 2014
- Secured Third Prize prize in paper presentation ,"Structure based drug design for Insulin like growth factor 1 receptor". (NCRADME) ,held at TKIET, Warananagar, Feb 27-28. 2010
- National symposium on Teachers training program organized by Sunbeam institute of information Technology ,Karad. 2010
- Faculty development program "faculty ghrysalis" organized by Sanjay Ghodawat Group of Institutions, Atigre. 2010
- Computational Fluid Dynamics, Faculty Development Workshop organized by TKIET,Warananagar. 2011

Place: University of Liege, Belgium   Majeed Jamakhani