

SUDIPTA KUMAR HAZRA

Food Science Data Analysis || PG.D. Statistics || B.E. Food
Tech and Biochem Engg. || Chemometrics || Statistical
Learning || Biostatistics

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[Website](#)



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[Github](#)

SUMMARY

I am Sudipta, a Walsh Research Master's student at the University College Cork and Teagasc, Ireland. Currently, I am working on Food Proteomics Data Analysis. I am very passionate about building statistical solutions for the Food, Chemical, and Biological Sciences.

EXPERIENCE

Walsh Scholar

[Teagasc](#)

10/2023 - Present

Irish Agri-Food Research Institute

- Meat Proteomics Data Analysis,
- R, tidyverse, ggplot2, limma, QFeatures

Statistical Analyst, AI/ML Team

[Kovaion Consulting](#)

07/2022 - 06/2023

AI/ML Business Solution

- Backend python developer and statistical analyst for Agri-Food Data Analysis
- Python, Flask, scikit-learn, Power BI, NLP libraries

Research Intern

[CSIR-Central Food Technological Research Institute \(CFTRI\)](#)

01/2022 - 03/2022

Food Technology Research Institute

- NMR Data Acquisition and Multivariate Analysis
- SIMCA, TopSpin, MATLAB

EDUCATION

Master's (research) degree, Food Science and Technology

[University College Cork](#)

10/2023 - 09/2025

Post-graduate diploma, Statistical Methods and Analytics

First Division, 70.4%

[Indian Statistical Institute](#)

07/2021 - 06/2022

Bachelor's degree, Food Technology and Biochemical Engineering

First Class with Honours, 76.61%

[Jadavpur University](#)

07/2017-06/2021



SKILLS

Technical Skills

- Machine & Statistical Learning
- Multivariate Data Analysis
- Statistical Methods
- Linear Modeling
- Proteomics Data Analysis

Programming Languages

- R
- Python
- Bash
- HTML 5 & CSS

Softwares/Interfaces

- Azure for Cloud Computing
- Git & GitHub
- PLS ToolBox

CERTIFICATION

[Winter School on Deep Learning](#)

Indian Statistical Institute

[Diploma in Chemometrics](#)

University of Copenhagen

[SPSS for Academic Research](#)

LinkedIn Learning

ACHIEVEMENT

[Walsh Scholarship](#) to pursue research masters on Food Omics Data Analysis at University College Cork and Teagasc, Ireland

[International Grant](#) to Participate in International School of Chemometrics 2021 (Remote), University of Copenhagen

[Best Paper Award](#), Conference of Machine Intelligence and Data Science Applications, 2020

Publications

Hazra, S., Terlouw, C., Gagaoua, M., Joe P., K., Picard, B., & Ruth, H. (2024, 2024-12-02). R and Bioconductor-based Workflow for Downstream Analysis of LFQ Meat Proteomics Data: Enhancing Reproducibility in Meat Proteomics Research VIBE/ICBG, Gallway, Ireland. <https://hal.inrae.fr/hal-04795654>

Biswas, A., Hazra, S. K., Chaudhari, S. R. (2023), Detection of barley malt syrup as an adulterant in honey by ¹H NMR profile, Food Chemistry, 429, <https://doi.org/10.1016/j.foodchem.2023.136842>

Hazra, S. K., Sarkar, T., Salauddin, M., Sheikh, H. I., Pati, S., Chakraborty, R. (2020), Characterization of phytochemicals, minerals and in vitro medicinal activities of bael (*Aegle marmelos* L.) pulp and differently dried edible leathers, Heliyon, 6(10), e05382, <https://doi.org/10.1016/j.heliyon.2020.e05382>

Coding Projects

R and Bioconductor based Workflow for Meat Proteomics Research

<https://somu796.github.io/proteomics-workflow-food-and-meat-science/>

R

- This is a part of Food Proteomics Data Analysis Project. Published in [VIBE/ICBG Abstract Book](#)
- Several R and Bioconductor packages including data manipulation(Tidyverse), UniProt data base(UniprotR), data container(QFeature), protein expression analysis(limma), ensemble learning(EFS), and visualization(ggplot2, pheatmap, ggvenn, UpSetR).

limmaGenie: a cloud-hosted RAG chatbot for limma analysis

<https://limma-bot-cravd3dyaqhkegf8.eastus-01.azurewebsites.net/>

Python, Azure

- This is an independent collaborative project.
- Different tools and python packages were used for different tasks hosting(Azure Web App), user interface(Streamlit), LLM(Azure Open AI API, LangChain), webscrapping(Beautiful Soup), and version controlling(Git, GitHub).

Facial Emotion Detection Executable

<https://github.com/Somu796/emotion-detection-executable-app>

Python

- This was a demonstration work to showcase possible connection between AI/ML and Animal Welfare, presented at Science Week University of Limerick 2023.
- deepface, opencv packages were used to build a realtime facial emotion detection in python.

Analyzing the criminal cases to find pattern in outcome of bail application based on Judicial Documents

<https://github.com/Somu796/NLP-to-analyze-Judicial-Documents>

Python

- This is the thesis work of my PG.D. in Statistical Methods and Analytics Degree.

Statistical Skills

Design of Experiment: Full Factorial, Fractional Factorial, Response Surface Design

Linear Models: classical regression, multiple regression, t-test, ANOVA, ANCOVA, RM-ANOVA, linear mixed effect model

Multivariate Data Analysis and Chemometrics: PCA, HCA, PARAFAC, PLS based algorithms, Multi-way Analysis, Multi-block Data Analysis, Multivariate Curve Resolution.

Machine Learning: Supervised and Unsupervised Algorithms

Deep Learning: Neural Networks for Regression and Classification, Computer Vision (basics), Natural Language Processing.

Acknowledgement for Statistical Assistance

Verhulst, E. P., Álvarez, C., Brunton, N. P., & Rai, D. K. (2024). Optimizing polyphenol extraction and UPLC-MS/MS analysis from red clover (*Trifolium pratense* L.) species using response surface methodology. *Food Chemistry Advances*, 5. <https://doi.org/10.1016/j.focha.2024.100828>

Conference Attended

Virtual Institute of Bioinformatics & Evolution/Irish Computational Biology and Genomics symposium 2024, Gallway, Ireland.

51st Annual Food Science and Technology Conference 2023, Teagasc Food Research Centre Ashtown, Dublin, Ireland

International Conference on "Machine Intelligence and Data Science Applications (MIDAS-2020), India

Science Communication

Pint of Science Dublin, 2024

Organizer

[https://pintofscience.ie/team/Dublin#:~:text=things%20from%20people!%20%3A\)-,Sudipta%20Hazra,-Local%20Volunteer](https://pintofscience.ie/team/Dublin#:~:text=things%20from%20people!%20%3A)-,Sudipta%20Hazra,-Local%20Volunteer)

ESB Science Blast, University of Limerick 2024

Presenter

AI and Animal Behaviour (with help of live facial emotion recognition demo)

<https://somu796.github.io/sudiptahazra.github.io/event/esb-science-blast/>

The National Ploughing Championships Ireland 2024

Presenter

Stress, Animal, Meat Quality and Proteomics (presented with help of wordcloud from text mining results)

<https://somu796.github.io/sudiptahazra.github.io/event/national-ploughing-championship/>