WASIM AFTAB, PhD

Bioinformatician and Software Engineer

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📍 Neuried, Germany

EXPERIENCE

Post-doctoral researcher   📅 01/2022 - Present
Ludwig Maximilian University of Munich

- **AI App Development:** Developed a QA bot web app that improved biomedical information retrieval by **137.5%** over SOTA and deployed it on a DigitalOcean droplet
- **NGS Data Analysis:** Programmed Snakemake pipelines for NGS data using R and Python which reduced the data processing time by half and enhanced the reproducibility of results

Research Assistant during PhD   📅 09/2015 - 12/2021
Ludwig Maximilian University of Munich

- **Proteomics Data Analysis:** Developed R packages, Shiny apps, and Electron desktop applications for proteomics data analysis and integration, adopted by over 10 research labs. Also created MATLAB scripts for efficient mass spectrometry analysis and accurate protein complex prediction

Senior Software Engineer   📅 04/2012 - 12/2012
Icelero Technologies Private Limited

- **Test Automation Development:** Designed and implemented an automated testing pipeline using Java and Selenium, significantly accelerating testing processes and reducing manual effort

R&D Assistant   📅 08/2009 - 03/2012
Jawaharlal Nehru Centre for Advanced Scientific Research

- **High-Performance Computing Optimization:** Optimized linear algebra C subroutines, significantly increasing computational speed for quantum chemistry simulations
- **Protein Function Prediction:** Developed C algorithms to predict the functions of hypothetical proteins, providing critical insights for structural biologists in wet lab research

EDUCATION

PhD Computational Proteomics   📅 09/2015 - 12/2021
Ludwig Maximilian University of Munich

MSc Computer Engineering   📅 01/2013 - 05/2015
King AbdulAziz University

BEng Computer Engineering   📅 09/2005 - 08/2009
Visvesvaraya Technological University

SUMMARY

I specialize in transforming high-throughput omics data into actionable insights and developing NLP tools to enhance biomedical information retrieval. My work leverages innovative techniques like prompt engineering and knowledge graphs to guide LLMs in generating precise responses for complex biomedical QA tasks. Recently, I developed an AI search engine that significantly enhances LLM-generated outputs by integrating explicit signals from user queries. My past projects include open-source software for peptide identification from MALDI–IMS data, proteomics data visualization, Snakemake pipelines that drastically reduced data processing time, and R packages widely adopted across labs. While my primary focus has been on biomedical research, I am a versatile problem-solver with strong communication skills, eager to apply my expertise across various domains. I am driven by a passion for advancing research and fostering cross-disciplinary innovation in STEM fields.

SKILLS

Programming Languages: R, Python, MATLAB, C, Shell scripting

Tools and Frameworks: Cytoscape, MS Excel, Selenium, Plotly, Snakemake, Cypher, R Bioconductor

Software and Application Development: Chatbot development, Full-stack app development (Shiny, Electron)

CERTIFICATIONS

- Genomic Data Science Specialization (Coursera)
- Quantitative Proteomics (EMBL)
- Challenges in Multiomics Data Integration (EMBL)
- Cypher Fundamentals (Neo4j)

LANGUAGES

- English, Bengali, Hindi - Full professional proficiency
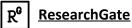- German, Arabic - Limited working proficiency

FIND ME ONLINE

LinkedIn   **GitHub**

ResearchGate   **Portfolio**