Ashutosh Mishra

Bioinformatics Scientist

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Computational biologist with 6+ years of experience in analyzing next-generation sequencing (NGS) data using bioinformatics and machine learning algorithms. Working with researchers to translate functional queries into substantial therapeutic outcomes using multi-omics data-analysis and visualization.

WORK EXPERIENCE

Technical Lead
TCS Roche Group

12/2022 - Present — *Warsaw*

Achievements/Tasks

- **Lead** Translational Genomics and Informatics support group responsible for monitoring and upgrading NGS analysis applications
- **Develop** suite of applications with engineering team based on Protein sciences 'Laboratory information management systems', to aid scientists in carrying out wet-lab research
- **Analyse** integrations between cloud based applications to identify and resolve problems in functional coverage

Researcher
TCS Genomics Group

07/2017 - 12/2022 — *Delhi*

Achievements/Tasks

- **Designed functional-omics platform** for a client. Worked with UX team to create prototype wire-frames of analysis pipelines for transcriptomics, proteomics, DNA methylation and chip-sequencing.
- **Network Analysis for prioritizing drugs against SARS-CoV-2** infection: using pathways(reactome) and PPI(STRING) networks obtained from differential gene expression in host.
- **Semantic Integration of Clinical Knowledge**: SME for breast cancer clinical data analysis, building ontologies and relationships (Protege, SWRL to add rule, SPARQL).
- **Built a differential expression based ML model** (association rule mining) using profiles of 'placebo' and 'drug' treated cancer cell lines to establish links between biological pathways and adverse drug reactions.
- **Awarded Patent "Adverse Event Prediction using deep neural nets**:" Multi-label classification model using python for prediction of side effects using gene expression signatures and drug fingerprints.

ACHIEVEMENTS

Received 'On the spot recognition' award at TCS for contribution in client project and presentations (2021)

Secured All India rank 19 in GATE, Biotechnology (2015)

Awarded Institute Merit Scholarship for outstanding Academic Performance (2011-2013)

TECHNICAL SKILLS

NGS Analysis | Machine Learning | Proteomics | Multi-omics Analysis | Drug Discovery | Docker | Python | Microservices | AWS | R | SQL | Bioinformatics pipelines | Shell Scripting | Spatial Transcriptomics

ACADEMIC EXPERIENCE

IIT BOMBAY (05/2015 - 06/2017)

- Developed a combination (sonodynamic and photothermal) trigger based gold-nanoparticle **Drug Delivery System** for efficient delivery of chemotherapy drug to minimise side effects.
- Built a low cost, IOT enabled **Automatic Blood Glucose Monitoring Device** prototype with automatic dispensing of lancet and strips, displayed at Medical expo, pune.

EDUCATION

M.Tech, Biomedical Engineering
Indian Institute of Technology, Bombay

06/2015 - 06/2017 — *9.24 CPI*

B.Tech, Biotechnology
G.B.Pant engineering college, Pauri

06/2010 - 05/2014 — *79.44 %*

LANGUAGES

English
Full Professional Proficiency

Hindi
Native or Bilingual Proficiency

RELEVANT EXPERIENCE

WGS | WES | GWAS | Drug Repurposing | Disease Biomarkers | Clinical Research | GSEA | Protein interaction networks | Cloud Computing