ANUJ OJHA

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Summary

- **Over 5+ years** of professional experience specializing in **data analysis** and reporting, utilizing tools such as **R, Python, SAS**, **SQL,** and **Microsoft Excel**.
- Extensively used pandas, **numpy, sickit-learn, matplotlib, TensorFlow** libraries in python.
- Extensively used R packages: **ggplot2, dplyr, tidyr, caret, reshape2, knitr, survival**
- Experience in producing external files and customized reports using various **SAS** procedures like **Proc Print, Proc Freq, Proc Transpose, Proc Tabulate, Proc Means, Proc Sort, Proc Summary, Proc Report, Macros** and **ODS**.
- Proficient in **Statistical Data Modeling**, with expertise in testing and implementing statistical models.
- Strong background in developing **data-driven solutions** that enhance **business processes**, optimize **decision-making**, and support **strategic goals** within organizations.
- Extensive experience in data analysis, **statistical modeling**, and the development of **machine learning predictive and classification models**
- Experienced in applying **systems analysis** concepts (**SDLC, requirements analysis**) to translate business needs into effective technical and analytical solutions.
- Knowledgeable in **enterprise systems (ERP concepts)** and modern IT infrastructure, supporting cross-functional collaboration and digital transformation initiatives.
- Adept at utilizing **RNA-seq data** for analysis, validation, **machine-learning** model development, conducting **survival analysis** and building **survival predictive models**.
- Skilled in **Differential Gene Expression** analysis and building **Cox regression proportional hazard** models for survival analysis.
- Skilled in **Gene Ontology** and **Pathway Enrichment** analysis, **Omics** data analysis.
- Expertise in database management, including **NCBI, UniProt, UCSC Genome Browser, STRING, Oracle, MySQL,** and **REDCap**.
- Experienced in **SQL Programming** and proficient in using **ETL** tools (**SSIS, SSRS, SPSS)**.
- Extensive experience with **data visualization** tools like **Tableau** and **PowerBI**.
- Proficient in **ArcGIS** geographic information system, including creating **choropleth maps**
- Skilled in data preparation for statistical modeling, encompassing data cleaning, descriptive analysis, data validations, and preliminary data reporting.
- Proficient in **Microsoft Office Tools**.
- Experienced in writing, analyzing, and executing **Business Required Documents**.
- Proven ability to create reports and transform data according to user needs.
- Independent, detail-oriented, self-motivated, and an effective team player with strong problem-solving, writing, and oral communication skills.
- Willingness to learn and adapt to new technologies and skills.

EDUCATION

Ph.D. in Biomedical Engineering
University of Toledo, Toledo, OH
January 2022 – Present (Expected graduation – May 2026)
CGPA: 3.82
Dissertation: *Interpretable Machine Learning Models for Predicting Cancer Survival*

Master of Science in Analytics
Dakota State University, Madison, SD
January 2019 - May 2020
CGPA: 3.8

Master of Science in Engineering – Biomedical Engineering
Grand Valley State University, Grand Rapids, MI
August 2016 - December 2018
3.33 CGPA
Thesis: *Analysis Of Coherence Between Electromyographic (EMG) Signals to Examine Neural Correlations in Muscular Activation During Standing Balance Tasks: A Pilot Study*

Bachelor of Engineering in Biomedical Engineering
College of Biomedical Engineering and Applied Sciences, Nepal
2009 - 2013
3.37 CGPA
Project: *Surface modification of biomaterial by coating with Sida acuta extract and the study of the wettability of coated biomaterials*

PROFESSIONAL EXPERIENCE

University of Toledo, Toledo, OH
Graduate Research Assistant
Aug 2022 – present

- Conduct statistical analysis using R, Python, and MS Excel, developing statistical models to derive meaningful insights from experimental data.
- Utilize RNA-seq data to build survival predictive models and apply machine learning algorithms for enhanced predictive accuracy.
- Perform differential gene expression analysis and develop Cox proportion hazard ratio models using RNA-seq gene expression FPKM datasets.
- Build different statistical models using Next Generation Sequencing (NGS) data.
- Create protein-protein interaction network diagrams using Cytoscape.
- Effectively use NCBI BLAST databases for various purposes, including multiple sequence alignment.

- Proficient in the management of diverse databases, including but not limited to NCBI, UniProt, UCSC Genome Browser, and STRING.
- Develop skills in leveraging database platforms for comprehensive genomic, proteomic, and biological data retrieval, analysis, and interpretation.
- Navigating and extracting valuable insights from different databases to support molecular biology research and enhance data-driven decision-making.
- Creating annotations and translations using FASTA sequences.
- Conduct gene ontology and enrichment analysis to gain insights into the functional significance of genes.
- Analyze RNA-seq, gene expression, and mutation datasets from diverse cancer databases, such as USCS Xena Browser, to contribute to comprehensive research findings.
- Exploring and enhancing bioinformatics tools to integrate computational approaches into molecular biology research, enhancing data analysis capabilities.
- Facilitate open communication and refinement of research ideas within multidisciplinary teams, ensuring collaborative efforts align with project goals and contribute to the overall success of the research initiatives.
- Demonstrate meticulous record-keeping skills, maintaining comprehensive and organized documentation of experimental procedures, results, and observations.
- Create impactful research posters and presentations for effective communication of research outcomes.
- Participate in conferences and workshops to stay updated on the latest advancements in cancer biology and data analysis methodologies.
- Mentor and train junior team members in data analysis techniques, fostering a collaborative and knowledge-sharing environment.
- Contribute to grant and manuscript writing, showcasing the significance and impact of research findings in scientific publications.
- Engage in continuous professional development to stay abreast of emerging technologies and methodologies relevant to molecular biology, bioinformatics, data analysis, and machine learning.

University of Toledo, Toledo, OH

Graduate Teaching Assistant

Jan 2022 – August 2022

- Collaborate with the instructor to prepare course materials, including lecture slides, assignments, and assessments specific to Medical IoT concepts.
- Conduct or assist in laboratory sessions where students can gain hands-on experience with IoT devices used in the medical field.
- Provide guidance on setting up and troubleshooting IoT devices and sensors.
- Assist in grading assignments, exams, and other assessments, ensuring fair and consistent evaluation of student performance.
- Assist students in overcoming technical challenges related to programming, data analysis, or connectivity issues with IoT devices.
- Collaborate with students on research projects related to Medical IoT, offering guidance on experimental design, data collection, and analysis.

- Attend course planning meetings with the instructor and other teaching assistants to coordinate activities, discuss teaching strategies, and address any concerns.

Florida International University - Herbert Wertheim College of Medicine, Miami, FL
Data Analyst

Nov 2020 – Jan 2022

- Developed algorithms and scripts utilizing advanced statistical measures, data mining, and analytical skills, employing tools such as Python, R, SQL, ArcGIS, and Microsoft Excel.
- Cultivated expertise in handling healthcare data within the framework of the Health Insurance Portability and Accountability Act (HIPAA).
- Conducted comprehensive data analysis and generated reports tailored to specific user requests, ensuring data quality validation.
- Analyzed primary data collected through the NeighborhoodHELP program to derive meaningful insights.
- Generated reports for quality improvement initiatives based on diverse data analysis requests.
- Prepared and presented reports to funders and the state of Florida, demonstrating a commitment to transparency and accountability.
- Utilized analytical skills to create tables, graphs, and reports specifically focused on COVID-19 data collected by the team.
- Analyzed data from various mobile healthcare facilities using a range of analytical measures to support informed decision-making.
- Provided descriptive statistical measures to enhance the interpretation of data trends.
- Employed ArcGIS Pro to create a choropleth map illustrating the distribution of mobile healthcare services across different regions.
- Generated a polygon feature class and mapped the service areas, outlining boundaries for targeted communities using ArcGIS Pro.
- Designed maps showcasing distinct areas within targeted communities, complete with respective boundaries using ArcGIS Pro.
- Utilized ArcGIS Pro for geocoding, employing symbolization for block groups in Florida based on the Area Deprivation Index (ADI) score.
- Collaborated with interdisciplinary teams to ensure comprehensive data analysis and reporting aligned with organizational goals.
- Implemented data visualization techniques to enhance the communication of complex findings to diverse stakeholders.
- Conducted regular reviews of data analysis methodologies to stay abreast of industry best practices.
- Participated in continuous learning opportunities to stay updated on the latest advancements in data analysis tools and techniques.
- Collaborated with internal and external stakeholders to gather requirements and tailor reports to meet specific needs.

- Uphold ethical standards in handling sensitive healthcare data, demonstrating a commitment to privacy and confidentiality.

Grand Valley State University, Grand Rapids, MI
Graduate Assistant
Jan 2017 - April 2018

- Led the initiative to enhance and refine the website for the Biomedical Engineering Department at Grand Valley State University, overseeing improvements in design, functionality, and content.
- Curated, modified and manipulated diverse datasets obtained from faculty members, employing advanced skills to design tables, graphs, and listings for seamless integration into the website.
- Implemented website upgrades with a focus on user experience, accessibility, and content relevance to enhance the department's online presence.
- Proficiently created tables and reports utilizing R and SAS, ensuring data presentation met rigorous standards.
- Acquired hands-on proficiency in soldering techniques and operation of 3D printing machines, contributing to a comprehensive skill set.
- Maintained proactive communication through regular meetings with faculty members and staff, fostering effective collaboration for laboratory setup.
- Developed and documented standard operating procedures (SOPs) for laboratory equipment and processes, ensuring consistency and safety in operations.
- Facilitated student engagement by guiding the development of 3D printing models, demonstrating a commitment to hands-on learning.
- Managed the distribution of all necessary components and devices required for student projects, ensuring a streamlined project development process.

Nepalese Army Institute of Health Sciences, Kathmandu, Nepal
Biomedical Engineer
Jan 2015 - July 2016

- Executed comprehensive service and maintenance protocols for a variety of medical equipment, ensuring optimal functionality and adherence to industry standards.
- Conducted training sessions for clinicians and patients on the proper use and maintenance of biomedical equipment, emphasizing safety and efficiency.
- Methodically documented team workflows, fostering transparency and facilitating streamlined processes within the organization.
- Analyzed and interpreted business requirements documents, translating them into detailed and insightful reports that supported informed decision-making.
- Collaborated closely with clients to gain a deep understanding of ongoing projects enabling the development of versatile and analytical reports.

- Maintained daily communication within the workgroup, providing regular updates on project progress and addressing any pertinent issues.
- Established and maintained meticulous records of daily work activities using various Microsoft Office tools for future reference and audit purposes.
- Generated ad-hoc reports tailored to specific client requests, showcasing adaptability and responsiveness to evolving needs.
- Developed technical reports aligning with clients' specifications, incorporating a balance of technical detail and accessibility for varied audiences.
- Authored comprehensive technical reports, procedures, and presentations, ensuring clear communication of findings to both technical and non-technical stakeholders.
- Evaluated safety reports and efficiency metrics, contributing to continuous improvement initiatives, and promoting a culture of safety within the organization.
- Performed periodic assessments of training needs to refine and customize training programs efficiently.
- Participated in cross-functional teams to enhance communication and collaboration among various departments.
- Contributed to the development of standardized reporting templates, ensuring consistency and clarity across various reports.
- Actively participated in quality assurance processes implementing improvements based on evaluation results.

PEER-REVIEWED PUBLICATIONS

- **Ojha, A.**, Zhao, S., Ajpunonu, B., Zhang JT., Simo, K. and Liu, JY (2025). " GAP-App: A sex-distinct AI-based predictor for pancreatic ductal adenocarcinoma survival as a web application open to patients and physicians" Cancer Letters: 217689
- Dong, Z., **Ojha, A.**, Barlow, L., Luo, L., Liu, JY and Zhang, JT (2024) “The eIF3a translational control axis in the Wnt/β-catenin signaling pathway and colon tumorigenesis” Cancer Letters: 217303
- Schneider, G. W., Fairclough, J. , Bhoite, P., **Ojha, A.**, Hey, M.T., Shaffiey S., Mayhew, M., Denton, A., Kenney and A., Seetharamaiah, R. (2025) “The Risk of Catastrophic Surgical Expenditure within a Community-Based Primary and Preventive Care Program at a Florida Medical School: A Modeling Study” Cureus 17(9): e93545
- **Ojha, A.** (2023). "An Introduction to Electromyography Signal Processing and Machine Learning for Pattern Recognition: A Brief Overview." Extensive Reviews 3(1): 24-37.
- **Ojha, A.**, Alderink, G. and Rhodes, S. (2023). "Coherence between electromyographic signals of anterior tibialis, soleus, and gastrocnemius during standing balance tasks." Frontiers in Human Neuroscience 17, 1042758.
- Mayhew, M., Denton, A., Kenney A., Fairclough, J., **Ojha, A.**, Bhoite, P., Hey, M.T., Seetharamaiah, R., Shaffiey S., and Schneider, G. W. (2023). "Social deprivation, the Area Deprivation Index, and emergency department utilization within a community-based primary

and preventive care program at a Florida medical school." Journal of Public Health 32(5): 827-835.

SKILLS

Programming Language: R, SAS, C, Python, MATLAB, SQL
Data Analytics Tools: SAS (Proc Print, Proc Freq, Proc Transpose, Proc Tabulate, Proc Means, Proc Sort, Proc Summary, Proc Report, Macros and ODS), R (dplyr, tidyr, knitr, ggplot, shiny, data.table, caret, survival), RStudio, Python (numpy, pandas, matplotlib, seaborn, scikit-learn, keras, TensorFlow), SPSS, JMP, Tableau, PowerBI
Other Bioinformatics Tools: Cytoscape, Gene Ontology, KEGG enrichment, BLAST, UCSC Genome browser, Transcriptomics, Clustal Omega, EnrichR, Chimera, Uniprot, Omics
Databases: NCBI, UniProt, UCSC Genome browser, STRING, DAVID, KEGG, REDCap**,** MySQL, SQLite, SSIS, SSRS, Oracle, Teradata
Geographic Information System: ArcGIS
Microsoft Office Tools: MS Word, MS PowerPoint, MS Excel

ADDITIONAL ACADEMIC CERTIFICATES

- Biostatistics - co-sponsored by the University of the Incarnate Word, the Association for Prevention Teaching and Research (APTR), and the US Centers for Disease Control and Prevention (CDC)
- Information Systems Specialization by University of Minnesota
    - IS/IT Governance
    - Analysis for Business Systems
    - Enterprise Systems
    - IT Infrastructure and Emerging Trends
- Generative AI with Large Language Models by DeepLearning.AI
- Getting Started with SAS Programming – online course authorized by SAS
- Doing More with SAS Programming – online course authorized by SAS

AWARDS AND HONORS

- Runner-up in 2025 Three Minute Thesis (3MT) Competition at The University of Toledo
- Winner of Hackathon sponsored by AT&T and DSU (Dakota State University), Feb 2019

LEADERSHIP ACTIVITIES

- **Treasurer** - Nepali Student Organization, The University of Toledo, OH (*May 2024 – May 2025)*
- **Class Representative** - Students' Council of College of Biomedical Engineering and Applied Sciences, Nepal (*Jan 2009 - Jan 2010)*