JIAHE (RENA) REN

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EDUCATION

University of Illinois, Chicago Chicago, Illinois
Master of Science in Civic Analytics 2024.08 -
Coursework: Data Mining for Business, Al Machine Learning, Public Policy Dev and Process, Data A nalysis, Urban Econ and Public Policy

North China University of Technology Beijing
Data Science and Big Data Technology 2020.09 - 2024.06
Coursework: Signal and System, Big Data Visualization Technology, SPSS Software and Its Application, Application Development Technology Based on Hadoop, Machine Learning, Remote Sensing Data Intelligent Processing, Natural Language Processing, Data Structure, Principles of Database

SKILLS

Programming: Python, SPSS, C#, SQL, R, Matlab, Mathematica, Stata, LaTeX
Poster presentation:

- Ren, J., Bai, J., Agarwal, A. Bruce Tan. (2025). Weighted Gene Co-Expression Analysis Identifies Immune and Epithelial Remodeling Signatures in Chronic Rhinosinusitis with Nasal Polyps. Poster presented at the 19th Annual Lewis Landsberg Research Day

Publication:

- Ren, J., Bai, J., Agarwal, A. Bruce Tan. Weighted Gene Co-Expression Analysis Identifies Immune and Epithelial Remodeling Signatures in Chronic Rhinosinusitis with Nasal Polyps. Manuscript in prep..
- Ren, J. (2023). Research Summary on OCT Image Classification Using Deep Learning. Published in NCUT Campus Research Newsletter.

PROFESSIONAL EXPERIENCE

Department of Otolaryngology, Feinberg School of Medicine, Northwestern University Chicago, IL
Data Analyst May 2025 - Present
Join a translational research team as a Data Analyst, applying biostatistics and machine learning techniques to analyze large-scale clinical and immunologic datasets.

- Perform end-to-end bulk RNA-seq preprocessing, including quality control, low-expression filtering, and normalization, ensuring high-integrity transcriptomic data.
- Apply Weighted Gene Co-expression Network Analysis (WGCNA), PCA, and factor analysis to identify molecular modules and signatures associated with CRSwNP patient stratification and recurrence risk.
- Collaborate with clinicians and wet-lab scientists to translate statistical findings into biomarker candidates and manuscript-ready figures for publication.
- Conducted a systematic review/meta-analysis of CRSwNP recurrence, integrating clinical/biomarker datasets, applied PCA, factor analysis, and Cox regression to stratify recurrence patterns and identify predictors.

CITY OF WARRENVILLE - AI INTEGRATION PROJECT Warrenville, IL
Policy & Data Analyst Sep 2025 - Present

- Assess AI adoption strategies across departments, mapping operational workflows and digital readiness.Evaluate feasibility and ROI analysis for priority AI applications in public works, finance, and police departments, quantifying high-impact use case efficiency and service-level gains.
- Conduct a comparative scan of mid-sized U.S. cities implementing AI, synthesizing best practices and governance frameworks to guide policy design.
- Develop an AI governance and compliance framework covering data privacy, information classification, and accountability structures.
- Develop data-driven policy recommendations by conducting systematic analysis, ROI modeling, and predictive simulations

MACHINE LEARNING LABORATORY, NORTH CHINA UNIVERSITY OF TECHNOLOGY Beijing, China
Research Assistant Sep 2022 - Jun 2024

- Conducted EEG signal preprocessing and feature extraction to improve model robustness using dimensionality reduction.
- Collaborated with ophthalmology hospitals to develop YOLOv8-based retinal image classifiers, reaching 96% detection accuracy across 2,000+ annotated images.
- Designed data cleaning and normalization pipelines for multimodal biomedical datasets using Python.
- Collaborated a research study optimizing the study's algorithmic workflow and empirical results.

GUOXIN INTERNATIONAL ENGINEERING CONSULTING GROUP CO., LTD. Beijing, China
Data & Project Management Intern Jan 2024 - Mar 2024

- Analyzed data and documentation of smart-city and video surveillance infrastructure projects, supporting design and procurement.
- Compiled and visualized project fund utilization and progress metrics for a $20M budget.
- Prepared feasibility and cost-benefit reports for urban public safety and hospital digitalization initiatives.
- Coordinated with engineers and municipal partners to meet quality, safety, and compliance standards.