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| **Yiran Xu**  New York, NY, United State | +1-929-474-1346 | yx2954@cumc.columbia.edu | |
| **EDUCATION** |  |
| **The Chinese University of Hong Kong, Shenzhen (English Immersion Education)** | Sep 2020 - May 2024 |
| Bachelor of Science in Bioinformatics |First Class Honor| mGPA: 3.558/4.00 (Top 30%)  **Core Courses:** Machine Learning in Computational Biology, Molecular Simulation and Modeling, Design and Analysis Bioinformatics Algorithm, Financial Management (A+)  **Awards:** Founding member of Global Young Leaders Union in Greater China Area (1/6); 2024 Harmonia College Outstanding Graduate Award; 2023 Outstanding Contribution Award from the Hope For Rare Foundation; 22nd round Undergraduate Research Awards (URA); Silver Medal in Kaggle Competition “Parkinson’s Freezing of Gait Prediction” (ranked 18/1380); 2021-2022 Outstanding Student Organization Award; 2021-2022 Harmonia College Outstanding Leadership Award; 2021-2022 The University Honors (Excellent Student Leader) Award  **Publication**:https://doi.org/10.3389/fnut.2024.1366435 | Shenzhen, China |
| **UC San Diego** | Jan 2023 - Jun 2023 |
| ***Visiting Program*** | GPA: 3.95/4.00  **Core Courses:** Data Analysis/Design for Bio, Healthcare Financial Modeling With Excel (A+) | San Diego, US |
| **Columbia University** | |  | | --- | | Sep 2024 - Jun 2026 | |
| ***Master of Science in Biostatistics* |** Public Health Data Science  **Core Courses:** Data Science I, Biostatistics Methods, Design of Medical Experiments | NY, US |
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| **PROFESSIONAL EXPERIENCE** |  |
| **Analyst intern, Charles River Laboratories** Sep 2023 - Feb 2024   * **Secondary research:** Directed market research on competitors' competitor strategies, including core technologies, niche markets, and signature animal models; gained a comprehensive understanding on market dynamics in biopharmaceuticals and drug development cycle, presented findings through clear visualizations (e.g., Microsoft Suite) and strong oral communication skills to support strategic decision-making and differentiation strategy development, positioned company for client acquisition * **Quantitative analysis:** Constructed a data-driven market entry strategy by prioritizing drug target data from number of pipelines and stages of clinical trials; innovatively designed a Python script to accelerate identification of high-potential drug niches, resulting in expansion into cardiovascular and metabolic drug markets; demonstrated strong problem-solving skill * **Problem-solving skills:** Formulated a differentiation strategy to leverage Charles River's brand advantages, establishing a new department for cardiovascular and metabolic drugs, leading to service expansion, recruitment of specialized experts, and effective team operations | |
| **Marketing and Research & Development Intern, Shenzhen Ruiping Technology Co., Ltd** Jun 2023 - Aug 2023   * **Critical thinking:** Executed market research on scar removal, combining product properties, customer feedback and literature review; suggested an innovative product formula to retain efficacy while reducing chemical skin irritation, initiated development of a new product formula to solve customer pain points and catalyzed introduction of a safer, market-ready product * **Quantitative analysis:** Engineered Python scripts to evaluate relationships between keywords of similar product on e-commerce platform and sales volume, discovering high-impact keywords to optimize marketing strategy for innovative scar removal product * **Project management:** Led end-to-end development of a bacterial vaginitis test box, overseeing ideation, design, prototyping, and factory production coordination; resulted in a product launch on major e-commerce platforms * **Team collaboration:** Spearheaded cross-functional collaboration between R&D and marketing teams, leveraging insights from both teams to drive market entry decisions and launch three additional product pipelines | |
| **Part-time Assistant, McKinsey & Co**  Jan 2023 - Mar 2023   * **Market entry**: Led assessment of traditional private banking services, adopting models such as 3W2H and SCP+1 frameworks to identify service gaps and develop a strategic plan for a top-tier bank's entry into China, resulting in alignment of brand best self with client’s pain points * **Client segmentation:** Guided in-depth analysis of ultra-high-net-worth individuals' investment behaviors and service expectations, dividing into 3 distinct customer persona, empowered bank to target most suitable potential clients based on brand advantages * **Strategy modeling:** Employed the Censydiam Consumption Motivation Analysis Model to segment Chinese blue-collar workers into 4 customer persona, analyzing current and expected selves; directed customization of differentiated products tailored to specific needs of each groups | |
| **Independent Course project, Healthcare Financial Modeling With Excel** Feb 2023   * **Financial modeling:** Built a comprehensive financial model for Imaging Center, forecasting cash flows and evaluating capital budgeting, resulting in an NPV of $406,807 and an IRR of 17.2% for new medical imaging equipment investment, enhanced understanding on finance and Profit and Loss (P&L) * **Investment investigation:** Applied Time Value of Money principles and the Capital Asset Pricing Model (CAPM) to assess the impact of new equipment on company risk and return, determining investment feasibility with a payback period of 3.11 years * **Data analytics in Excel:** Processed over 10,000 data records with advanced Excel skills - including data cleaning, outlier detection, and pivot tables - designed layouts and created visualizations to effectively present financial results and support decision-making | |
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| **RESEARCH EXPERIENCE** |  |
| **Analyst Intern, BGI Joint Cultivation Program** | Mar 2024 - Present |
| *Molecular Diagnosis for Rare Diseases Cases, under Prof. Mingyan Fang* | Shenzhen, China |
| * **Analytic skills on huge data set:** Conducted data analysis on over 140,000 variants in Whole Exome Sequencing (WES) data from rare disease cases with Linux OS, demonstrating attention to detail and proficiency in large dataset management * **Creative thinking:** Devised an innovative causal mutation protocol using an in-house large language model, identifying 14 novel causal mutations and achieving an overall diagnosis rate of 25% * **Written communication:** Analyzed patients’ genotypes to identify similarities with existing cases by secondary research on relevant publications, bridging gap between medical practitioners and computational insights to adjust treatment plans beyond standard symptom-based approaches * **Problem-solving:** Advocated early molecular diagnosis in childhood for rare diseases to boost efficiency in health ecosystem, resulting in a first-author publication in a peer-reviewed journal | |
| **Leading Researcher, The Chinese University of Hong Kong** | Jul 2022 - Mar 2024 |
| *Research on Milk MiRNA, under Prof. Yongfei Wang and Dr. Eyal Maori* | Shenzhen, China |
| * **Independent Research:** Published a peer-reviewed article titled “Recent Insights into Breast Milk microRNA: Their Role as Functional Regulators' in Frontiers in Nutrition” (April 2024), addressing debate on whether breast milk miRNA is absorbed by infants and proposing application of breast milk exosomes as drug carriers * **Critical thinking:** Extracted miRNA data from over 100 publications on different animals' milk miRNA studies; captured top 10 expressed miRNAs across species, revealing significant cross-species consistency * **Analytic skill:** Conducted enrichment analysis on top 10 consistently expressed miRNAs; mapped to 2,095 related target genes and concluding enrichment results in key pathways including angiogenesis and cell proliferation, proposing these miRNAs function as important regulators in infant developmental processes | |
| **Research Associate, University of California, San Diego** | Mar 2023 - Jun 2023 |
| *In-house bioinformatics tool development, under Prof. Milton Saier* | San Diego, US |
| * **Programing language:** Developed the TMS-Analyzer & Segment Extractor (TASE) with Python and Linux, automatically returning segmentation of full protein sequences into Transmembrane Segment (TMS)-specific files, facilitating further analysis of transmembrane properties with other in-house tools and solving challenge of inaccessible TMS data * **Rapid learning**: Built a web version of the TASE tool after self-learned programing languages (HTML and Java), creating a user-friendly interface to enable easy use by non-technical users and allowed direct transformation of full protein sequences to TMS-specific formats suitable for further analysis, increasing accessibility and improving tool utilization | |
| **Team Member, Kaggle Competition** | Apr 2023 - Jun 2023 |
| *Parkinson’s Freezing of Gait Prediction* | San Diego, US |
| * **Data analysis on huge dataset:** Optimized model accuracy by 6.4% and reduced noise by 17.7% by applying Moving Average Filters and Fast Fourier Transformation to preprocess 70GB of 3-axis accelerometer data from Parkinson's patients, extracting high and low-frequency signals and increasing signal quality on ultra-large datasets with tens of millions of observations * **Proficiency in machine learning model:** Achieved a final mean average precision of 0.3306 on predicting freezing of gait episodes by constructing a 1D Convolutional Neural Network with 6-fold cross-validation; ranked 18/1380 with a silver medal | |
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| **LEADERSHIP EXPERIENCE** |  |
| **Hope for Rare Foundation, Volunteer**  Sep 2023 - Present   * **Oral communication skill**: Fostered interdisciplinary collaboration to fund rare disease research; Popularized knowledge about rare diseases to public | |
| **Harmonia College Resident Student Association, the 2nd term President**  Sep 2021 - May 2022   * **Teamwork and leadership:** Spearheaded the development of "Sports Culture" at Harmonia College; authored the inaugural association's charte * **Problem-solving skill:** Collected feedback from dormitory residents through various channels; addressed and resolved over 30 concerns, improving living conditions and fostering positive communication with residents | |
| **Other Extracurricular Experiences**  Sep 2020 - May 2021   * **Time management skills** **and adaptation**: Managed responsibilities across 5 club management teams, balancing diverse tasks in a fast-paced environment | |
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| **SKILLS&INTERESTS** |  |
| |  | | --- | | * **Software:** Microsoft Office Suite, Python, R, Java, HTML, SAS, Linux * **Hobbies:** Music (Saxophone, Drums set, Vocal); Sports (Table Tennis, Soccer) | | |