Yihan CHEN

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SUMMARY OF QUALIFICATIONS

Master's-level Biostatistician with extensive experience in life sciences research, specializing in quantitative data analysis and bioinformatics. Proven expertise in statistical genetics, structural variant analysis, and multi-omics data integration using advanced tools such as R, SAS, Python, and PLINK. Adept at developing reproducible workflows, conducting complex data analyses, and contributing to high-impact research projects, including Phenome-Wide Association Studies (PheWAS) and longitudinal studies. Critical thinker with a strong foundation in CRP work, pharmaceutical research, and data-driven decision-making. Passionate about leveraging bioinformatics to uncover genetic mechanisms underlying complex diseases and drive advancements in therapeutic research.

RESEARCH-BASED STATISTICAL GENETICS AND DATA ANALYSIS EXPERTISE

Extensive experience in genetic analysis tools such as PLINK, MERLIN, the Michigan Imputation Server, LDSC, and MTAG.
Advanced proficiency in R programming, including data wrangling with tidyverse, statistical modeling, data visualization with ggplot2, and creating reproducible workflows using RMarkdown and GitHub. Experienced in writing and testing custom R packages.
Proficient in programming and software tools, including R, Python (with Snakemake), Git, GitHub, and statistical tools like PLINK for genetic data analysis.
Skilled in applying statistical methods such as regression modeling (linear, logistic, survival), hypothesis testing, and estimation, tailored for biomedical and epidemiological research.
Effective communicator, experienced in presenting statistical results clearly and concisely to diverse audiences, including researchers, clinicians, and stakeholders.

WORK EXPERIENCE

University of Washington Seattle, WA
Research Assistant, Department of Genome Science 06/2024-present
Investigated Disease Association with Structural Variation
Utilized long-read DNA sequencing data to genotype structural variants and conducted association studies with AllofUS and UKBiobank data to find the association between disease symptoms and structural variants.

University of Washington Seattle, WA
Grader, Stat311 Elements of Statistical Methods *03-06/2024, 09-12/2024*
Grader, Stat394 Probability I *01-03/2025*

Seattle Children's Research Institute Seattle, WA
Research Assistant, Simon Johnson Lab 06/2021-06/2023
Collected and organized a database on mouse health condition for projects studying the mitochondrial disease's research; designed and conducted an independent research project evaluating the effectiveness of Vatiquinone in Leigh Syndrome treatment.

RESEARCH EXPERIENCE

University of Washington Seattle, WA 01/2025/present
Advised by Prof. Kevin Lin
Collaborating with Prof. Kevin Lin on an independent research project in Spring 2025, focusing on either developing a cell-type label transfer workflow for microglia research in Alzheimer's disease or reproducing figures on cell morphology using Patch-sequencing data.

Snohomish County Health Department, Snohomish, WA 09/2024-12/present
Generating R Code for BRFSS Analyses, A Framework *for Snohomish County Health Department*
Developing a statistical framework to analyze BRFSS data (2011–2022) on smoking patterns in Snohomish County. Contributed to the background section and designed four models.

University of Washington Seattle, WA 09/2024-12/2024
Investigation of Alternative Scoliosis Diagnosis Methods
Evaluated the SpineScan scoliometer as a non-invasive, cost-effective alternative to X-rays. Applied Lasso and Ridge regression to predict spinal curvature and classify severity. Demonstrated significant associations through permutation testing.

University of Washington Seattle, WA 03/2024-06/2024

Longitudinal Analysis of Infant Birth Weight
Analyzed data from 878 mothers in Georgia using linear mixed models and GEE. Identified a 23g increase in birth weight per higher birth order and decreased risk of low birth weight with increased maternal age.

University of Washington Seattle, WA 03/2024-06/2024
Investigating Drivers of Coral Bleaching in the Hawaiian Archipelago
Analyzed NOAA data on the 2015 coral bleaching event. Modeled the effects of thermal stress, human activity, and PAR on coral health, showing up to 17% bleaching increase per unit rise in Degree Heating Weeks.

PUBLICATIONS

Co-authored five peer-reviewed publications on metabolic and neurological disease models, including studies on Leigh syndrome and therapeutic interventions.

EDUCATION

University of Washington Seattle, WA Expected 03/2025
MS in Biostatistics, (Track: Statistical Genetics)
University of Washington Seattle, WA 2022
BS in Biochemistry