Bowen Jiang

bj142@duke.edu; 1332 Campus Dr, Durham, NC, 27708

Education

Duke University '27	Durham, NC
- Major in Biomedical Engineering and Electrical & Computer Engineering, GPA 3.970	Aug 2023

- Selected courses: Linear Algebra & Application, Data Structures & Algorithms, Fundamentals of Electrical and Computer Engineering, Multivariable Calculus, Elements of Machine Learning

Western Reserve Academy '23	Hudson, OH
- Member of the Cum Laude Society, USABO Semifinalist	Aug 2019

Programming and Computer Skills

Coding – Python (Pandas, PyTorch, Tensorflow), R, Java, HTML, Excel, SQL

Models Used and Image Analysis Tools – ESM2 with LoRA fine-tuning, Prophet, Lightgbm, CNN, ImageJ, Cell Profiler

Research and Internship Experience

Barrett Lab at Broad Institute, Summer Intern	Cambridge, MA
- Utilized iPSC-derived neurons and their progenitor cells to study Down Syndrome specific morphology	June 2024 – Present

- Learned techniques such as cell painting and neuron differentiation from iPSC

Navid NaderiAlizadeh Lab, Summer Research	Hybrid
- Formulated a primal-dual constraint learning problem to tackle protein pathogenicity classification	April 2024 – Present

- Fine-tuned ESM2 models with PEFT LoRA to achieve desired outcome

Lan Lab, Work Study	Durham, NC
- Computationally simulated interactions between cGAS protein and DNA-RNA hybrid in cancer cells	Jan 2024 – May 2024

- Conducted protein structural analysis and design to generate desired mutant proteins

Musah Lab, Independent Study	Durham, NC
- Engineered functional podocyte cells using iPSC	Oct 2023 – Present

- Identified important genetic pathways related to podocyte injury from scRNA-seq data
- Preparing manuscript for publication

Apple, Intern	Beijing, China
- Constructed a Prophet-based ML model to predict 15-week Mac sales	Jun 2023 – Aug 2023

- Performed feature engineering with Pandas and tested Lightgbm model to predict weekly iPhone sales
- Incorporated the final Prophet model into the data team's prediction workflow

Cancer Informatics Research, Independent Researcher	Hudson, OH
- Created an innovative Python workflow to identify cancer-related biomarkers	Nov 2022 – Present

- Presented the research result at the Biophysical Society's annual conference in San Diego, Feb 2023

Dr. Wynshaw-Boris' lab at Case Western Reserve University, Intern	Cleveland, OH
- Cultured iPSC-derived cerebrum organoids to mimic early human brain development	May 2022 – Jun 2022

- Grew, observed, and analyzed human stem cells in various stages

Leadership and Extracurriculars

Duke BioByte, Head of Tech & Member of the Bio+AI Team	Durham, NC
- Performed front-end engineering to maintain the club's website with Java Script	Aug 2023 – Present

- Developing programs for personalized genetic analysis

Duke Chinese Student Association, Outreach Chair	Durham, NC
- Planned and organized on-campus cultural and speaker events	Sep 2023 – Present