

# ZUHAIR QURESHI

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Toronto, Ontario

*Software Engineering & Biomedical Engineering student with 800+ hours of data analysis and research experience.*

## EDUCATION

### **B.Eng., Software and Biomedical Engineering**

*McMaster University, 1280 Main St W, Hamilton, 2023-2028*

**RELEVANT COURSEWORK:** Biomedical Signals and Systems | Data Structures & Algorithms | Object-Oriented Programming

## EXPERIENCE

### **Data Science Research Intern**

*Holland Bloorview Kids Rehabilitation Hospital, Toronto, Ontario, Canada, May 2024 – October 2024*

- Uncovered biases and missingness in data using measures of statistical significance in the Province of Ontario Neurodevelopmental Network (POND) database, with over 3500 participants and 13,000 variables of consideration.
- Predicted clinical impairment in adaptive functioning of over 1,000 children using machine learning models trained on sociodemographic data in Python.
- Spearheaded quality control efforts on the POND database, reviewing and verifying all 3500+ rows for accounting errors.

### **Marsden Lab Research Assistant**

*Li Ka Shing Knowledge Institute, Toronto, Ontario, Canada, Aug 2022 - Aug 2023*

- Routinely implemented laboratory protocols requiring RNA extraction, PCR, cell culturing, and microscopy.
- Analyzed the lab's unprocessed primary data using Python and Excel (significance testing, plotting, sequence searching).
- Applied standard safety / sterilization protocols including autoclaving, ethanol spraying, and immediate disposal of sharps.

### **Okamoto Lab Research Intern**

*Sinai Health System, Toronto, Ontario, Canada, Jul 2022 - Aug 2022*

- Mapped and measured the luminescence of neural firing in mice using ImageJ image analysis software.
- Tested for significant differences in fluorescence of proteins and extrapolated protein concentrations via standard curves.
- Genetically engineered plasmids for transfection in mouse models, performing plasmid design, bacterial culturing, cell transfections, protein purification & fluorescent spectrometry.

## PROJECTS

- **Characterizing sociodemographic biases in adaptive functioning in a cohort of neurodiverse children:** machine learning research project undertaken at Holland Bloorview using NumPy, Pandas, matplotlib, and statistics libraries.
- **NoteFlow:** Natural Language Processing note summarization AI created using SpaCy library and TextRank algorithm
- **PinPoint:** a 3D-printed anklet integrating an Arduino location tracker and fall detection sensor to be synched with live SMS updates. Coded with NumPy, Plotly, and Pandas Python libraries.

## SKILLS

- **Web Development:** HTML, CSS, JavaScript, React, Node.js, Express.js, EJS, Git.
- **NoteFlow:** Python, Java, C, Bash, MATLAB.
- **Data Analysis:** SQL, Excel, Machine Learning, Natural Language Processing, Statistical Modeling.
- **Hardware and Design:** Arduino, Verilog, AutoDesk Inventor, Quartus Prime.