

Zain Parihar

Zain.Parihar@gmail.com [LinkedIn](#) [GitHub](#) [Personal Website](#)

EDUCATION

Queen's University

Honour's Bachelor of Computing, Specialization in A.I, Minor in Statistics. | Major GPA: 4.0

Sep. 2022 – Apr. 2026

Kingston, ON

EXPERIENCE

Teaching Assistant

September 2023 - Present

Queen's University, School of Computing

Kingston, ON

- Teaching Assistant for CISC 221 - Computer Architecture. Subjects of study include: Instruction-set architectures. Assembly Language, Data representations, Digital Logic, Circuits, ALUs, Memory Design & Allocation.
- Teaching Assistant for CISC 102 - Discrete Math. Subjects of study include: Proof Methods, Group Theory, Number Theory, Sets, functions, sequences, and relations. Equivalence relations. Linear and partial orderings.

Jr. Full-Stack Developer

May 2023 - August 2023

Scotiabank

Toronto, ON

- Orchestrated the deployment of robust enterprise Java solutions using the Spring Framework, resulting in an increase in system scalability, user access times, and overall reliability.
- Developed a consent enforcement system, enabling secure third-party access to customer account information.
- Conducted API testing and development with Postman, ensuring seamless integration and functionality.
- Implemented secure authentication mechanisms using JWTs and Opaque Tokens, safeguarding sensitive account information.

Data Organization Intern

June 2022 - September 2022

Sprackman Terrence LLP

Toronto, ON

- Planned & executed a company-wide transition to a paperless workspace & file system, reducing time for data entry & access.
- Developed an efficient and streamlined archiving system for permanent clients and files.

Automation Research Intern

June 2023 - September 2023

Queen's University

Kingston, ON

- Researched and collected market data to identify common parameters for dependency bots on GitHub.
- Developed strategies to determine dependency settings for new developers using python and the GitHub API.

PROJECTS & DESIGN TEAMS

AI Researcher

October 2023 - Present

Division of AI Research, QMind

Kingston, ON

- Leading a groundbreaking research project to improve automatic alt text generation, with the goal of benefiting visually impaired users and enhancing content moderation on social media platforms.
- Comparing various systems' performance on the Microsoft COCO dataset, including Convolutional Neural Networks and Transformers, resulting in an increase in accuracy for image-to-text caption generation models.

Perception Development Researcher

September 2023 - Present

Queen's AutoDrive

Kingston, ON

- Spearheaded the design of advanced computer vision algorithms, significantly enhancing the vehicle's visual awareness capabilities, contributing to an improvement in object detection accuracy.
- Currently researching and implementing cutting-edge machine-learning algorithms for the vehicle's detection and classification systems. This includes identifying and analyzing Traffic Lights, Street Signs, and Roads/Lanes.
- Preprocessed & organized raw datasets for usage in Machine Learning algorithms designed for Traffic Light classification

Electrical Design Team

January 2023 - Present

Queen's Hyperloop

Kingston, ON

- Currently developing electronic systems for power and controls onboard an autonomous tunnel boring machine.
- Systems include both custom-built solutions and embedded systems, and off-the-shelf micro-controllers.

Toyota Innovation Challenge

May 2023

University of Waterloo Faculty of Engineering

Waterloo, ON

- Designed a sophisticated image classification system leveraging Python and OpenCV.
- Utilized TensorFlow to implement image processing techniques and to create dense neural networks for training.

COURSEWORK

Stats: Data Science with R, Linear Data Analysis, Linear Regression, Statistical Inference, Probability Theory, Hypothesis Testing, K-Means clustering, Logistic Regression, Support Vector Machines, Principal Component Analysis, Singular value decomposition, Bayesian Inference, Gaussian Processes, Data visualization, Monte Carlo methods.

Computer Science: Digital Logic, Neural Networks, Decision Trees, Data Visualization, Decision Making & Reasoning in Computers, Cognitive Architectures, Perceptrons, Data Structures & Algorithms, Computer Architecture, Instruction-Set Architectures, Software Specifications, Propositional & Predicate Logic, Assembly.

Math: Linear Algebra, Calculus & Differential Equations, Graph Theory, Discrete Math, Combinatorics, Vector Calculus.

Languages: English, French, Spanish.

SKILLS

R, Python, Matlab, Java, C, C++, Javascript, PyTorch, Keras, Tensorflow, Joblib, Pandas, NumPy, Machine & Deep Learning, Image & Data processing, Data Science, Natural Language Processing (NLP), Computer Vision (CV), Data preprocessing, Git, GitHub, Anaconda, Atlassian Suite (Jira, Confluence, BitBucket), Kubernetes, SDLC (Software Development Life Cycle), Agile, Scrum, Waterfall, Iterative Development, Performance Tuning, Unit Testing, Backtesting.