Haider Riaz Khan

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EDUCATION

2024 – Pres	**M.S.** in Mathematics	CITY COLLEGE OF NEW YORK

2017 – 2018	**M.A.** in Philosophy	UNIVERSITY OF WATERLOO

Thesis: The Phenomenological Origins of Property (Advised by John Turri)
Seminars: Self-Knowledge, Human & Computer Intelligence, and Foundations of Quantum Theory

2010 – 2015	**B.Sc.** in Physics and Computer Science	McGILL UNIVERSITY

Special Research Project: The Building of a Cellular Detector (Advised by Paul François)

PUBLICATIONS

CONFERENCE AND JOURNAL ARTICLES

1. **Khan, Haider Riaz**, & John Turri. "Phenomenological Origins of Psychological Ownership." *Review of General Psychology* 26, no. 4 (December 2022): 446–63.

2. Li, Nan, Yu Lei, **Haider R. Khan**, Jingshu Liu, and Yun Guo. "Applying Combinatorial Test Data Generation to Big Data Applications." In *Proceedings of the 31st IEEE/ACM International Conference on Automated Software Engineering (ASE '16), 637-47.* New York, NY: Association for Computing Machinery, August 2016.

ESSAYS

1. "The Forever War." *Commune*, Issue 5, Winter 2020.

AWARDS & HONORS

2025	Dr. Barnett and Jean Hollander Rich Graduate Scholarship	CITY COLLEGE
2025	Dr. Barnett and Jean Hollander Rich Summer Fellowship	CITY COLLEGE
2018	Paul Seligman Memorial Scholarship	UNIVERSITY OF WATERLOO
2015	Dean's Multidisciplinary Undergraduate Research List	McGILL
2014	NSERC-CREATE Neuroengineering Award	McGILL
2010	Alexander Rutherford Scholarship	WESTERN CANADA HIGH SCHOOL

TECH EXPERIENCE

2025 - Pres	**Co-Director and Founding Engineer**	CAL.RED (NYC, USA)

In collaboration with Theo Ellin Ballew, I led and maintain the development of a curated web calendar for arts and action events in NYC. Events can be added by anyone, subject to editor approval.

2024 - Pres	**Software Engineer**	BASE EDUCATION (NYC, USA)

Wrote GraphQL APIs and built out the application logic for delivering data insights—including computing student level data, aggregate statistics, and advanced features such as differentially private statistics. Created fast, efficient and secure data pipelines that power the backend systems.

2021 - 2022	**Senior Software Engineer**	AVENUE 8 (NYC, USA)

Implemented Avenue 8's observability infrastructure. Wrote automation, monitoring, and alerting scripts. Automated the management of AWS provided resources using Terraform. Improved network security.

2019 - 2021	**Software Engineer**	LIFION BY ADP (NYC, USA)

Built Lifion's graph database framework using a microservices architecture, Node.js, Gremlin, and distributed message queuing services. Wrote optimized Gremlin queries and SQL subroutines.

| 2016 - 2017 | **Software Engineer** | MEDIDATA SOLUTIONS (NYC, USA) |

Contributed to the development of a Java based combinatorial test data generator called BIT-TAG.

TECHNICAL SKILLS

Programming Languages: TypeScript, Clojure, Java, Python, C, Bash, MATLAB, SQL, Gremlin
Data Querying & Management: MySQL, MongoDB, GraphQL, Elasticsearch, Redis
Development & Automation: Git, Docker, GitHub Actions, Terraform, GCC, javac

TEACHING & RESEARCH EXPERIENCE

| 2018 | **Translator** | PHILOSOPHICAL SCIENCE LAB, UNIVERSITY OF WATERLOO |

Transalted English stimuli into Pashto and Urdu for the purposes of a cross-cultural study of the "ought implies can" principle. Provided feedback on research paper drafts to Prof. Turri.

| Winter 2018 | **Teaching Assistant** | UNIVERSITY OF WATERLOO |

Biomedical Ethics (Prof. Andrew Stumpf)

| Fall 2017 | **Teaching Assistant** | UNIVERSITY OF WATERLOO |

Professional and Business Ethics (Dr. Jim Jordan)

| 2014 - 2015 | **NSERC Neuroengineering Fellow** | RUTHAZER LAB, MONTREAL NEUROLOGICAL INSTITUTE |

Wrote CANDLE-J; an open-source 3-D image denoising software designed as an ImageJ plugin. CANDLE-J is adept at processing deep in vivo 3D multiphoton microscopy images where the signal to noise ratio (SNR) is low. It is written in Python, Java, and multithreaded C.

| 2012 - 2014 | **Computational Scientist** | COOK LAB, DEPARTMENT OF PHYSIOLOGY, MCGILL |

Developed MATLAB routines to measure the cross-correlation of microsaccades and microstimulations (in area MT of the visual cortex). Created a library of MATLAB functions to compute joint metrics of neural activity. The joint metrics are computed for both single unit and multi unit neuronal spikes.

| Fall 2011 | **SUS Peer Tutor** | MCGILL |

Met with students routinely to go over physics and chemistry concepts; held exam review sessions.

TALKS & PRESENTATIONS

| 2016 | comBinatorial bIg daTa Test dAta Generator (BIT-TAG) | ASE'16, SINGAPORE |
| 2014 | Neuroscience From Below | STUDENT SUMMER COLLOQUIUM, MCGILL |

LANGUAGES

English, Urdu, Pashto