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Dr. Farhana H Zulkernine

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NSERC CRSNG

Canadian Common CV commun canadien

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Dr. Farhana Zulkernine

Language Skills

Language	Read	Write	Speak	Understand	Peer Review
English	Yes	Yes	Yes	Yes	Yes
Hindi	No	No	Yes	Yes	No

Degrees

- 2009/6 — Doctorate, Computer Science, Queen's University at Kingston
  Supervisors: Martin, Patrick, 2004/1 - 2009/6
- 1997/5 — Master's Thesis, Artificial Intelligence, Bangladesh University of Engineering and Technology (BUET)
  Supervisors: Kaykobad, Mohammad, 1994/1 - 1997/5
- 1993/9 — Bachelor's, Computer Science and Engineering, Bangladesh University of Engineering and Technology
  Supervisors: Alam, Shamsul, 1993/7 - 1993/9

Recognitions

2021/12 - 2021/12
Best Paper Award
IEEE and Thompson and Reuters
Prize / Award
For the workshop paper titled Detection of Similar Legal Cases on Personal Injury in the International Workshop on Mining and Learning in the Legal Domain (MLLD-2021), Auckland, New Zealand

2021/12 - 2021/12
Best Student Paper Award
IEEE
Prize / Award
For conference paper titled FireWarn: Recognizing Fire Hazards Using Computer Vision in IEEE Cognitive Machine Intelligence (CogMI).

2021/12 - 2021/12
Best Paper Award
IEEE
Prize / Award
For the paper titled Incremental Community Detection in Distributed Dynamic Graph in the IEEE International Conference on Big Data Computing Service and Applications (BigDataService),

2020/11 - 2020/11 Best Paper Award
IEEE
Prize / Award
For conference paper titled An Adapter for IBM Streams and Apache Spark to Facilitate Multi-level Data Analytics at IEEE IEMCON, Vancouver, Canada.

User Profile

Research Specialization Keywords: Artificial Intelligence, Data Analytics, Deep Learning, Machine Learning, Big Data Management, Cognitive Computing, Cloud Computing, Distributed Systems

Employment

2020/7 Associate Professor
School of Computing, Faculty of Arts and Science, Queen's University at Kingston
Full-time, Associate Professor
Tenure Status: Tenure

2017/1 - 2020/6 Assistant Professor, Coordinator of the Cognitive Science Program
School of Computing, Faculty of Arts and Science, Queen's University at Kingston
Full-time, Assistant Professor
Tenure Status: Tenure Track
As a tenure-track academic position carry out 1. Research (40%) 2. Teaching (40%) and 3. Administration (20%). Obtained Research Initiation Grant of $40K CAD for initial research support. Research focuses on Big Data Management and Analytics in various application areas including Cognitive Science and Health Informatics. Teaching responsibilities include two undergrad and one graduate course. Coordinate the cognitive science program and provide support to students as necessary. Additional responsibilities include serving on conference and workshop organizing committees, volunteer in departmental and institutional events, and supervising undergraduate and graduate research projects and thesis work.

2014/7 - 2016/12 Teaching Adjunct, Coordinator of the Cognitive Science Program
School of Computing, School of Computing, Queen's University at Kingston
Part-time, Adjunct, Assistant Professor
Tenure Status: Non Tenure Track
Design six core cognitive science courses: 1. Introduction to Cognitive Science (in-class) (COGS100), 2. Introduction to Cognitive Science (online - awarded government funding) (COGS100), 3. Cognition and Computation (COGS201), 4. Cognitive Modeling (COGS300), 5. Neural and Genetic Algorithms (COGS400/CISC452/CMPE452/CISC874*) cross-listed as a graduate course* 6. Advanced Undergraduate Project (COGS499) Teach all the courses and supervise and coordinate undergraduate research projects. Build liaison with related disciplines such as Philosophy, Psychology, Linguistics, and Neuroscience. Serve as the primary contact person and coordinator of the program. Position implies **no independent research responsibilities** (no research funding) **and only teaching and administration.**

2014/6 - 2016/12 Research Adjunct
School of Computing, Faculty of Arts and Science, Queen's University at Kingston
Part-time, Adjunct, Assistant Professor
Tenure Status: Non Tenure Track
Supervise undergraduate students and co-supervise graduate students funded by other faculty members. I had no research funding.

2012/11 - 2014/8 IBM SOSCIP Postdoctoral Fellow and Research Adjunct, Research and Development Centre, IBM Canada, School of Computing, Queen's University, Kingston, ON, Canada
Queen's University at Kingston
Led and managed "Analytics-as-a-Service (AaaS)" for *medical data*, a Southern Ontario Smart Computing Innovation Platform (SOSCIP) consortium project funded by IBM, to facilitate big data analytics in the cloud (ref. publications). *Inter-disciplinary research collaboration* with Department of Family Medicine at Queen's University and South East Local Health Integration Network (SELHIN) including academic collaboration with University of Waterloo and Western Ontario. Prepared demos for and CASCON 2013 and SOSCIP events in 2014. We got two companies interested in productizing the research and one has already signed necessary collaborative documents. Tools used: IBM tools DB2, SPSS, COGNOS, BigInsights, and other research tools such as WINGS(Workflow Instance Generation and Selection), R, Weka and Matlab, multi-tenant DB2 database, PHP, HTML, and java scripts. Also worked as a research adjunct to formally co-supervise students.

2010/7 - 2012/9 MITACS Elevate Industrial Postdoctoral Fellow and Research Adjunct, Industry Collaborator: CA Technologies, School of Computing, Queen's University, Kingston, ON, Canada
Mathematics of Info Tech & Complex Systems
Led and managed the project titled "Decision Support for Database Administrators using Warehouse-as-a-service (DSDAware)" in collaboration with CA Technologies to identify the Mainframe 2.0 DB2 problems from the log data and the provenance data on problem solving steps. The framework provides decision support to the DBAs in solving Mainframe database problems. Developed the CAPRI tool for data integration using data and text mining techniques to extract knowledge from log data. CAPRI was extended as an undergraduate student project, to use the Hadoop framework in Amazon cloud for *big data analytics*. Defined a template for SLA for decision services in the cloud. The research included a study on case-based and rule-based systems, and cloud-based NoSQL databases to store knowledge and provide decision support. Also served as a research adjunct to co-supervise students during this position.

2009/6 - 2010/6 Researcher, Service Oriented Applications, Center for Information Technology, Institute for Scientific and Technical Research (IRST), Fondazione Bruno Kessler (FBK), Trento, Italy
Fondazione Bruno Kessler (FBK), Trento, Italy
Designed aspect oriented models for monitoring SLA as a part of the SLA@SOI large European Union project with many academic and industry partners. The project aimed at designing a SLA-driven service provisioning and management framework. In collaboration with SAP Laboratories in Germany, defined models of business objects to enable design and verification of customizable and extensible service-based enterprise business processes. Developed a tool for specification and verification of the model. Obtained extensive exposure in writing proposals for a European Union project and working with many partner organizations on FP7 SLA@SOI project. Supervised grad students.

1998/10 - 2003/2 Senior Software Developer and Team Lead, Software Integration Department, Spicer Corporation (was acquired by OpenText in 2008), Kitchener, ON, Canada
Software Integration, Spicer Corporation
Started as a developer and got promoted to the teamlead position in less than three years. As the team lead, wrote project proposals based on clients' requirements, supervised and executed complete software development life cycles. Performed project management including budgeting, hiring and training team members, provided on-site and remote consultations to prospective clients and worked with marketing and documentation groups as required. As a developer (during the first few years), developed and maintained custom enterprise software systems for clients such asthe Canadian National Railway software and Ontario Hydro. Developed and maintained integrated software packages for multiple document management software such as FileNET, Matrix, Hummingbird, OpenText and Documentum.- Tools: C, C++, VB, Java, Access, Active X, MicrosoftProject, ODBC, JDBC, WebSphere, Oracle DB, FileNET and WebLogic web server.

1995/6 - 1997/5 Systems Analyst, UNICEF (United Nations Children's Fund), Country Office, Dhaka, Bangladesh
Software and Information Technology, UNICEF Bangladesh
Designed custom software for statistical analysis of the data collected for various UNICEF projects. Developed other custom application software for project and resource management. Provided training for the developed application software to different levels of users. Tools: VB, Java, VC++, Microsoft Access,and MySQL Server.

1993/12 - 1995/5 Assistant Programmer, Excise, Taxes & Customs (ETAC) Data Computerization Project (sponsored by the World Bank), National Board of Revenue (NBR), Dhaka, Bangladesh
Excise, Taxes & Customs (ETAC) Data Computerization Project (sponsored by the World Bank), National Board of Revenue (NBR)
Performed analysis of similar systems in other countries and designed and developed a custom software application to generate Taxpayer's Identification Number (TIN) for the government of Bangladesh. It made a big impact on the tax system of the country by pioneering digitization of the taxpayers' data and allowing better tax management and reporting. Tools:DBase, VC++ and VB.

Leaves of Absence and Impact on Research

2023/7 - 2024/8 Sabbatical, Queen's University at Kingston
During my sabbatical leave, I was collaborating with the medical researchers at the University of Sharjah. The work slowed down and some of the project end dates had to be extended due to being away from the lab and the students. Some of the projects that needed participant recruitments also were delayed.

Research Funding History

Awarded [n=32]

2022/3 - 2025/2
Principal Investigator

New Frontiers in Research Fund Special call, Grant

Funding Sources:
Natural Sciences and Engineering Research Council of Canada (NSERC)
NFRF Pandemic Special Call
Total Funding - 237,970
Portion of Funding Received - 250,000
Funding Competitive?: Yes

Co-investigator : Furkan Alaca; Khalid El-gazzar

2023/3 - 2025/2 New Frontiers in Research Fund Exploration, Grant

Principal Investigator

Funding Sources:
Natural Sciences and Engineering Research Council of Canada (NSERC)
New Frontiers in Research Fund Exploration
Total Funding - 250,000
Portion of Funding Received - 200,000
Funding Competitive?: Yes

2022/3 - 2024/2
Principal Investigator

NSERC Research Tools and Instruments, Grant

Funding Sources:
Natural Sciences and Engineering Research Council of Canada (NSERC)
NSERC RTI
Total Funding - 150,000
Portion of Funding Received - 150,000
Funding Competitive?: Yes

2022/1 - 2023/9
Principal Applicant

Prevalence of Moderate-to-Severe Osteoarthritis Pain of the Hip and Knee by Index Joints in Canadian Primary Care: A Proof of Concept Study from the Canadian Primary Care Sentinel Surveillance Network, Grant

Funding Sources:
Pfizer Canada Inc.
industry funding
Total Funding - 100,000
Portion of Funding Received - 40
Funding Competitive?: Yes

2018/5 - 2023/4
Principal Applicant

A Smart Big Data Analytics and Knowledge Management Framework, Grant

Funding Sources:
Natural Sciences and Engineering Research Council of Canada (NSERC)
Discovery
Total Funding - 140,000
Portion of Funding Received - 140,000
Funding Competitive?: Yes

2018/5 - 2023/4
Principal Applicant

A Smart Cloud-Based Big Data Analytics and Knowledge Management Framework (CFI Grant), Grant

Funding Sources:
Canada Foundation for Innovation (CFI)
JELF Infrastructure Fund
Total Funding - 80,000
Portion of Funding Received - 80,000
Funding Competitive?: Yes

2018/5 - 2023/4
Principal Applicant

A Smart Big Data Analytics and Knowledge Management Framework, Grant

Funding Sources:
Natural Sciences and Engineering Research Council of Canada (NSERC)
NSERC DG Launch Supplement
Total Funding - 12,500
Portion of Funding Received - 12,500
Funding Competitive?: Yes

2019/5 - 2023/4
Principal Applicant

A Smart Big Data Analytics and Knowledge Management Framework (CFI-IOF), Grant

Funding Sources:
Ontario Research Fund (ORF)
Infrastructure operating fund
Total Funding - 12,000

Portion of Funding Received - 12,000
Funding Competitive?: Yes

2019/1 - 2023/4
Principal Applicant

A Smart Big Data Analytics and Knowledge Management Framework (CFI-ORF), Grant

Funding Sources:
Ontario Research Fund (ORF)
CFI
Total Funding - 80,000
Portion of Funding Received - 80,000
Funding Competitive?: Yes

2020/5 - 2023/4
Principal Investigator

Learning Distributed Patterns from Multimodal Streaming Data, Grant

Funding Sources:
Natural Sciences and Engineering Research Council of Canada (NSERC)
CRD
Total Funding - 194,000
Portion of Funding Received - 194,000
Funding Competitive?: Yes

2022/3 - 2023/3
Principal Applicant

Voice and Video-based Service Provisioning on the Cloud, Grant

Funding Sources:
Natural Sciences and Engineering Research Council of Canada (NSERC)
RTI
Total Funding - 150,000
Portion of Funding Received - 100
Funding Competitive?: Yes

2019/4 - 2023/3
Co-applicant

Cybersecurity Training for Defending Canada’s Government, Critical Infrastructure, Businesses, and Citizens, Grant

Funding Sources:
Natural Sciences and Engineering Research Council of Canada (NSERC)
CREATE
Total Funding - 1,650,000
Portion of Funding Received - 100,000
Funding Competitive?: Yes

2022/2 - 2023/2
Principal Applicant

Prevalence of Moderate-to-Severe Osteoarthritis Pain of the Hip and Knee by Index Joints in Canadian Primary Care: A Proof of Concept Study from the Canadian Primary Care Sentinel Surveillance Network, Grant

Funding Sources:
Mathematics of Information Technology and Complex Systems (MITACS)
Accelerate cluster
Total Funding - 80,000
Portion of Funding Received - 70
Funding Competitive?: Yes

2022/2 - 2023/1
Co-applicant

An Explainable Active Learning Agent for Intrusion Detection and Risk Assessment on MIL-STD-1553-based Avionics Networks, Grant

Funding Sources:
Defence Research Establishment Suffield (DND) (Medicine Hat, AB)
IDEAS
Total Funding - 1,000,000
Portion of Funding Received - 72,000
Funding Competitive?: Yes

Co-investigator : Steven Ding;

Principal Investigator : Md Zulkernine

2018/1 - 2022/12
Principal Applicant

Intelligent data profiling for managing massive streaming data, Grant

Funding Sources:
IBM Canada Centre for Advanced Computing (CAS)
Academic collaboration
Total Funding - 102,000
Portion of Funding Received - 102,000
Funding Competitive?: Yes

2022/3 - 2022/8
Principal Investigator

Autonomous Metro Rail Sensor Data Analytics for Anomaly Detection and Correlation Analysis with Environmental Variables, Grant

Funding Sources:
Mathematics of Information Technology and Complex Systems (MITACS)
Accelerate
Total Funding - 30,000
Portion of Funding Received - 30,000
Funding Competitive?: Yes

2019/9 - 2022/8
Principal Applicant

Deep Learning for Data Transfer and AI in Smart Vehicles, Grant

Funding Sources:
Canadian Urban Transit Research & Innovation Consortium (CUTRIC)
Automated and Connected Electric Vehicle Integration: Optimization Analysis & Techno-Economic Predic
Total Funding - 36,000
Portion of Funding Received - 36,000
Funding Competitive?: Yes
Mathematics of Information Technology and Complex Systems (MITACS)
Accelerate Cluster
Total Funding - 43,998
Portion of Funding Received - 43,998
Funding Competitive?: Yes

2017/6 - 2022/8
Principal Applicant

Management and Analytics of Big Data, Grant

Funding Sources:
Queen's University
Research Initiation Grant
Total Funding - 40,000
Portion of Funding Received - 40,000
Funding Competitive?: No

2020/7 - 2022/6
Collaborator

Finding identity in the cancer digital twin, Grant

Funding Sources:
Social Sciences and Humanities Research Council of Canada (SSHRC)
NFRF Exploration
Total Funding - 250,000
Portion of Funding Received - 20,000
Funding Competitive?: Yes

2022/1 - 2022/6
Principal Investigator

Hi Sarah: A Voice Assistant for Seniors, Grant

Funding Sources:
Mathematics of Information Technology and Complex Systems (MITACS)
Accelerate

Total Funding - 15,000
Portion of Funding Received - 15,000
Funding Competitive?: Yes

2020/7 - 2022/6
Collaborator

SOCIALITE: An Emotional Augmentation System for Children with Profound Communication Disability, Grant

Funding Sources:
Queen's University
Wicked Ideas
Total Funding - 200,000
Portion of Funding Received - 6,000
Funding Competitive?: Yes

2022/7 - 2022/2
Co-investigator

Using real-world data to describe the variation in clinical diagnosis of early Alzhemer's disease in Ontario Canada, Grant

Funding Sources:
Roche Limited
industry funding
Total Funding - 35,000
Portion of Funding Received - 0
Funding Competitive?: Yes

2018/1 - 2021/12
Co-investigator

Using Advanced Analytics to Understand PTSD, Grant

Funding Sources:
Canadian Institute for Military and Veteran Health Research (CIMVHR)
CIMVHR
Total Funding - 388,000
Portion of Funding Received - 130,000
Funding Competitive?: Yes

2020/8 - 2021/8
Principal Applicant

AI Modelling for Chat-text and Biometric Data Collection and Analytics for a Cloud-based Medical Advising Platform, Grant

Funding Sources:
Mathematics of Information Technology and Complex Systems (MITACS)
Accelerate
Total Funding - 30,000
Portion of Funding Received - 30,000
Funding Competitive?: Yes

2020/11 - 2021/4
Principal Applicant

AI Modelling for Diabetes risk prediction, Grant

Funding Sources:
Mathematics of Information Technology and Complex Systems (MITACS)
Accelerate
Total Funding - 10,000
Portion of Funding Received - 10,000
Funding Competitive?: Yes

2019/1 - 2020/12
Collaborator

Develop a Cloud-Based Online Negotiation Platform for Legal Settlements, Grant

Funding Sources:
Natural Sciences and Engineering Research Council of Canada (NSERC)
New Frontiers in Research Fund
Total Funding - 200,000
Portion of Funding Received - 9,000
Funding Competitive?: Yes

Collaborator : Conflicts Analytics Lab; Queen's Smith School of Business; Queen's Law

2015/12 - 2020/12
Principal Applicant

Data set - CPCSSN (Canadian Primary Care Sentinel Services Network) (no monetary value), Contract

Funding Sources:
Canadian Primary Care Sentinel Services Network (CPCSSN)
N/A
Total Funding - 0
Portion of Funding Received - 0
Funding Competitive?: No

Co-investigator : Dr. David Barber;

Co-knowledge User : Ken Martin;

Collaborator : Dr. Brent Wolfrom

2019/1 - 2020/12
Principal Investigator

Enhancing Computer Vision to Better Recognize and Track Moving Objects, Grant

Funding Sources:
Queen's University
Queen's Research Opportunities Fund
Total Funding - 25,000
Portion of Funding Received - 25,000
Funding Competitive?: Yes

2019/1 - 2019/12
Principal Investigator

Research and Develop Artificial Neural Network Models for Learning Patterns from Streaming Data, Scholarship

Funding Sources:
Mathematics of Information Technology and Complex Systems (MITACS)
Globalink
Total Funding - 6,000
Portion of Funding Received - 6,000
Funding Competitive?: Yes

2019/1 - 2019/12
Principal Investigator

Research and Develop Artificial Neural Network Models for Activity Recognition, Scholarship

Funding Sources:
Mathematics of Information Technology and Complex Systems (MITACS)
Globalink
Total Funding - 6,000
Portion of Funding Received - 6,000
Funding Competitive?: Yes

2018/11 - 2019/10
Principal Applicant

Developing an Apache Spark Adapter for IBM Streams, Grant

Funding Sources:
Ontario Center of Excellence (OCE)
VIP - I
Total Funding - 25,000
Portion of Funding Received - 25,000
Funding Competitive?: Yes

2018/9 - 2019/2
Principal Investigator

A Multilevel Streaming Data Analytics Infrastructure for Predictive Analytics , Grant

Funding Sources:
Federal Economic Development Agency for Southern Ontario (The) (FedDev Ontario)
Accelerator grant
Total Funding - 15,000
Portion of Funding Received - 15,000

Funding Competitive?: Yes

Completed [n=1]

2018/1 - 2018/12
Principal Applicant

Research and Development of artificial neural network models for predictive and prescriptive analytics of medical data, Scholarship

Funding Sources:
Mathematics of Information Technology and Complex Systems (MITACS)
MITACS Globalink Research internship
Total Funding - 6,000
Portion of Funding Received - 6,000
Funding Competitive?: Yes

Under Review [n=3]

2024/5 - 2026/4
Principal Investigator

National Research Council Aging in Place Challenge Program, Grant

Funding Sources:
National Research Council Canada (NRC) (Ottawa, ON)
Total Funding - 150,000
Portion of Funding Received - 0
Funding Competitive?: Yes

2022/5 - 2023/4
Co-applicant

An Explainable Active Learning Agent for Intrusion Detection and Risk Assessment on MIL-STD-1553-based Avionics Networks, Grant

Funding Sources:
DND 4595-E: IDEaS
Total Funding - 1,000,000
Portion of Funding Received - 0
Funding Competitive?: Yes

2022/1 - 2022/6
Principal Applicant

HiSarah: A Voice Assistant for Seniors, Grant

Funding Sources:
Mathematics of Information Technology and Complex Systems (MITACS)
Total Funding - 15,000
Portion of Funding Received - 0
Funding Competitive?: Yes

Student/Postdoctoral Supervision

Bachelor's Honours [n=39]

2021/1 - 2021/4
Co-Supervisor

Gary Guo (Completed) , Queen's University
Thesis/Project Title: Computer simulation and visualization of social interaction
Present Position: Unknown

2021/1 - 2021/4
Principal Supervisor

Simin Zhang (Completed) , Queen's University
Thesis/Project Title: AStreaming Cloud IoT Data Ingestion and Analytics Framework for Human ActivityRecognition
Present Position: Unknown

2021/1 - 2021/4
Principal Supervisor

Liam Fiebig (Completed) , Queen's University
Thesis/Project Title: A Cloud Based Data Analytics Framework
Present Position: Looking for job

2021/1 - 2021/4 Principal Supervisor	Ruikang Luo (Completed) , Queen's University Thesis/Project Title: Video based fire hazard detection Present Position: MSc Student
2021/1 - 2021/4 Principal Supervisor	Jacky Li (Completed) , Queen's University Thesis/Project Title: Video based driver fatigue detection Present Position: Unknown
2021/1 - 2021/4 Co-Supervisor	Kevin Rush (Completed) , Queen's University Thesis/Project Title: Computer simulation and visualization of social interaction Present Position: Looking for job
2021/1 - 2021/4 Principal Supervisor	Chuyan Zheng (Completed) , Queen's University Thesis/Project Title: Deep learning based human face detection and recognition Present Position: Unknown
2021/1 - 2021/4 Principal Supervisor	Jie Li (Completed) , Queen's University Thesis/Project Title: EMR data analytics for diabetes prediction Present Position: MSc Student, Queen's School of Computing
2020/11 - 2021/8 Principal Supervisor	Tao Ma (Completed) , Queen's University Thesis/Project Title: Medical chat data analytics Present Position: MSc Student, University of British Columbia
2020/11 - 2021/8 Principal Supervisor	Yuelin Huang (Completed) , Queen's University Thesis/Project Title: Medical chat text summarization using NLP techniques. Present Position: Unknown
2019/9 - 2020/4 Principal Supervisor	Ryan Kishenbaum (Completed) , Queen's University at Kingston Thesis/Project Title: Sequential pattern mining for disease progression analysis of PTSD patients Present Position: Software Engineer, Transfix
2019/9 - 2020/4 Principal Supervisor	Sara Langlois (Completed) , Queen's University at Kingston Thesis/Project Title: Food item classification using deep learning in computer vision Present Position: Intern, LocateMotion, Toronto, Ontario, Canada
2019/9 - 2020/4 Principal Supervisor	Liam Tharp (Completed) , Queen's University at Kingston Thesis/Project Title: KFL&A Real Time Hospital Surge Prediction Present Position: Data Scientis, Fusion Analytics
2019/9 - 2020/4 Principal Supervisor	Martin Woo (Completed) , Queen's University at Kingston Thesis/Project Title: Hierarchical clustering of IOT sensor data for human activity recognition Present Position: Graduate Student, School of Computing, Queen's University, School of Computing, Queen's University
2019/9 - 2020/4 Principal Supervisor	Yifei Yin (Completed) , Queen's University at Kingston Thesis/Project Title: Non-pecuniary damages compensation estimator Present Position: Software Engineer, Snapcommerce
2019/9 - 2020/3 Principal Supervisor	Brendan Kolisnik (Completed) , Queen's University at Kingston Thesis/Project Title: Hierarchical image classification for online clothing sale Present Position: Graduate Student, Queen's University, Queen's University at Kingston
2019/9 - 2020/4 Principal Supervisor	Ethan Peters (Completed) , Queen's University at Kingston Thesis/Project Title: Food item classification using deep learning in computer vision Present Position: Software Engineer

2019/9 - 2020/4 Principal Supervisor	Zhaoyu Yin (Completed) , Queen's University at Kingston Thesis/Project Title: Driver fatigue detection using facial video data Present Position: Unknown, Unknown
2019/9 - 2020/4 Principal Supervisor	Lixian Su (Completed) , Queen's University at Kingston Thesis/Project Title: Traffic sign detection using video data with deep learning in computer vision Present Position: Unknown
2019/5 - 2019/8 Principal Supervisor	Yu Liu (Completed) , Queen's University at Kingston Thesis/Project Title: Deep learning for real time pattern extraction and recognition Present Position: Unknown
2019/5 - 2019/8 Principal Supervisor	Harsh Patel (Completed) , Queen's University at Kingston Thesis/Project Title: Deep learning for video activity recognition Present Position: Research Assistant, University of Toronto
2019/1 - 2020/4 Principal Supervisor	Zili Lou (Completed) , Queen's University at Kingston Thesis/Project Title: Email text categorization for automatic response generation Present Position: Graduate Student, Queen's University, School of Computing, Kingston
2018/9 - 2019/12 Principal Supervisor	Yuhao Chen (Completed) , Queen's University at Kingston Thesis/Project Title: An intelligent interactive system with face recognition capabilities Present Position: PhD Student, Queen's School of Computing
2018/9 - 2019/12 Principal Supervisor	Kennedy Ralts (Completed) , Queen's University at Kingston Thesis/Project Title: A multi lingual compassionate chatbot based on IBM Watson Present Position: Unknown
2018/9 - 2019/12 Principal Supervisor	Alex Wojaczek (Completed) , Queen's University at Kingston Thesis/Project Title: A deep learning model for molecular cell boundary recognition Present Position: Technical Infrastructure Program Manager, Google USA
2018/9 - 2019/12 Principal Supervisor	Mitchel Skarupa (Completed) , Queen's University at Kingston Thesis/Project Title: A sensor based tracker system for monitoring Alzheimer's patients Present Position: Unknown
2018/9 - 2019/4 Principal Supervisor	Hongkai Chen (Completed) , Queen's University at Kingston Thesis/Project Title: Mining patterns fromstreaming IoT data Present Position: Graduate Student, University of Toronto, Ontario, Canada
2018/9 - 2019/12 Principal Supervisor	Ruoran Liu (Completed) , Queen's University at Kingston Thesis/Project Title: A data lake for efficient hybrid data ingestion and query processing Present Position: Unknown
2018/9 - 2019/12 Principal Supervisor	Chantal Montgome (Completed) , Queen's University at Kingston Thesis/Project Title: A natural language query platform for a database management system Present Position: Software Engineering, Mark43, Toronto
2018/9 - 2019/12 Principal Supervisor	Grace Ge (Completed) , Queen's University at Kingston Thesis/Project Title: An end-to -end streaming text data ingestion and processing pipeline for sentiment analysis Present Position: Unknown
2018/9 - 2019/12 Principal Supervisor	Isaac Hogan (Completed) , Queen's University at Kingston Thesis/Project Title: A deep learning model for image super-resolution Present Position: Looking for job

2018/5 - 2018/8
Principal Supervisor
Marwa Chermiti (Completed) , Université de Carthage, Ecole Polytechnique de Tunisie, Tunisia
Thesis/Project Title: Topic Modeling using Text Mining and a Deep Belief Neural Network
Present Position: Associative Activity chez Enactust

2017/9 - 2018/4
Principal Supervisor
Lucas Rychlo (Completed) , Queen's University at Kingston
Thesis/Project Title: Lab reporting to public health Ontario: A cognitive computing approach
Present Position: N/A, N/A

2017/9 - 2018/4
Principal Supervisor
Brayden Dew (Completed) , Queen's University at Kingston
Thesis/Project Title: Data cleaning and correction using machinelearning techniques
Present Position: Junior Developer, OrthoEvidence Inc., Canada

2017/9 - 2018/4
Principal Supervisor
Mohammed Gasmallah (Completed) , Queen's University at Kingston
Thesis/Project Title: Video object recognition using deep learning models
Present Position: Graduate student, Queen's University

2017/9 - 2018/4
Principal Supervisor
Daisy Barrette (Completed) , Queen's University at Kingston
Thesis/Project Title: Training autonomous vehicles using machinelearning approach with sensor data
Present Position: Marketing Manager, Studio Labs, Canada

2017/9 - 2018/4
Principal Supervisor
Michael Petkov (Completed) , Queen's University at Kingston
Thesis/Project Title: Object recognition in images using deep convolutional neural networks
Present Position: N/A, N/A

2017/9 - 2018/4
Principal Supervisor
Alex Weatherhead (Completed) , Queen's University at Kingston
Thesis/Project Title: Designing autonomous vehicles using opticalobject recognition
Present Position: Graduate Student, University of Waterloo

2017/5 - 2018/4
Principal Supervisor
Paul Briggs (Completed) , Queen's University at Kingston
Thesis/Project Title: Using machine learning to predict enemy attacksin computer games
Present Position: Graduate Student, University of Toronto

Master’s non-Thesis [n=10]

2022/1 - 2024/4
Principal Supervisor
Drishti Sharma (In Progress) , Queen's School of Computing
Student Degree Expected Date: 2024/4
Thesis/Project Title: Triage-bot: A medical triage robot interactive web service
Present Position: Student, Queen's School of Computing

2021/9 - 2023/8
Co-Supervisor
Sam Baranek (Completed) , Queen's University
Thesis/Project Title: Deception detection from facial expressions
Present Position: Completed

2020/1 - 2020/12
Principal Supervisor
Junaid Charania (Completed) , Queen's University at Kingston
Thesis/Project Title: Hierarchical clustering of sensor IOT data
Present Position: DevOps Engineer, ThoughtWire

2020/1 - 2020/8
Principal Supervisor
Prithila Angkan (Completed) , Queen's University at Kingston
Thesis/Project Title: Human activity recognition using skeletal data
Present Position: PhD Student,, School of Computing, Queen's University

2020/1 - 2020/8
Principal Supervisor
Zunayed Mahmud (Completed) , Queen's University at Kingston
Thesis/Project Title: Video object tracking for autonomous vehicles
Present Position: Graduate Research Assistant, Aiim Lab

2018/4 - 2018/8 Principal Supervisor	Mandeep Kandhari (Completed) , Queen's University at Kingston Thesis/Project Title: An intelligent human-machine voice interaction systems Present Position: Software Engineer, Ford Motor Company
2017/9 - 2018/8 Principal Supervisor	Dharmitha Ajerla (Completed) , Queen's University at Kingston Thesis/Project Title: An edge computing framework for fall detection Present Position: Software Engineer, Microsoft
2017/9 - 2018/8 Principal Supervisor	Niventhini Indrajith (Completed) , Queen's University at Kingston Thesis/Project Title: Text mining for disease diagnostic Present Position: Data Scientis, Empire Life Insurance, Kingston, Ontario
2017/9 - 2018/4 Principal Supervisor	Dev Shah (Completed) , Queen's University at Kingston Thesis/Project Title: Stock market prediction Present Position: Senior Software Developer (DevOps & Infrastructure), Borrowell | Seasoned Investor
2017/9 - 2018/8 Principal Supervisor	Chander Dhar Sharma (Completed) , Queen's University at Kingston Thesis/Project Title: Unstructured text mining and topic modeling Present Position: Data Scientist, Accenture AI

Master’s Thesis [n=21]

2023/9 - 2025/4 Principal Supervisor	Jing Tao (In Progress) , Queen's School of Computing Student Degree Expected Date: 2025/8 Thesis/Project Title: Symptom diagnosis correlation learning from clinical data Present Position: student, Queen's Computing
2022/9 - 2024/4 Principal Supervisor	Zihan Zhang (In Progress) , Queen's University Student Degree Expected Date: 2024/4 Thesis/Project Title: Video and radar based human activity recognition Present Position: Master's student, Queen's University
2022/9 - 2024/4 Principal Supervisor	Jackson Cai (In Progress) , Queen's School of Computing Student Degree Expected Date: 2024/4 Thesis/Project Title: Medical text and structured data analysis for detecting osteoarthritis affected bone joints Present Position: student, Queen's School of Computing
2022/9 - 2024/4 Principal Supervisor	Nafiz Sadman (In Progress) , Queen's School of Computing Student Degree Expected Date: 2024/4 Thesis/Project Title: rPPG-based authentication system to prevent presentation attacks Present Position: Student, Queen's School of Computing
2022/9 - 2024/4 Principal Supervisor	Zihan Zhang (In Progress) , Queen's School of Computing Student Degree Expected Date: 2024/4 Thesis/Project Title: Radar and Video-based Human Acitivity Recognition Present Position: student, Queen's School of Computing
2021/9 - 2023/4 Co-Supervisor	Ruikang Luo (Completed) , Queen's University Thesis/Project Title: Video based human activity recognition and caption generation Present Position: Completed degree, unknown
2021/9 - 2023/4 Principal Supervisor	Haoran Qi (Completed) , Queen's University Thesis/Project Title: Using sensor data for Human Activity Recognition Present Position: Developer ,GeoTab, ON

2021/9 - 2023/4 Principal Supervisor	Austin Carthy (Completed) , Queen's University Thesis/Project Title: Safeguarding against cyberattacks via email or social media messaging Present Position: Completed, N/A
2021/9 - 2023/4 Principal Supervisor	Vignesh Rao (Completed) , Queen's University Thesis/Project Title: Anomaly detection from autonomous vehicular data Present Position: Degree completed, Insightsoftware
2021/9 - 2023/8 Co-Supervisor	Ian Pepin (Completed) , Queen's University Thesis/Project Title: Secured cloud service provisioning Present Position: Cybersecurity Consultant, CGI
2021/9 - 2024/4 Co-Supervisor	Jacqueline Chan (In Progress) , Queen's University Student Degree Expected Date: 2024/4 Thesis/Project Title: Devising safe and robust user authentication for cloud applications Present Position: MSc Student, Queen's School of Computing
2020/9 - 2022/4 Principal Supervisor	Calen Irwin (In Progress) , Queen's University Student Degree Expected Date: 2022/4 Thesis/Project Title: Anomaly detection in autonomous metro rail sensor data Present Position: MSc Student, Queen's School of Computing
2020/9 - 2023/7 Principal Supervisor	Zili Luo (Completed) , Queen's University Thesis/Project Title: Automatic email categorization and response generation Present Position: Degree Completed
2019/9 - 2021/12 Co-Supervisor	Karen Batch (Completed) , Queen's University at Kingston Thesis/Project Title: Deep Learning for medical image and text analysis Present Position: Completed graduation, Queen's University at Kingston
2019/9 - 2022/4 Principal Supervisor	Amtul Huq Ayesha (In Progress) , Queen's University Student Degree Expected Date: 2022/4 Thesis/Project Title: Vital signs measurement using deep learning models and face video data Present Position: MSc Student, Queen's School of Computing
2019/9 - 2021/4 Principal Supervisor	Mirza Hafiz (All But Degree) , Queen's University at Kingston Student Degree Expected Date: 2021/4 Thesis/Project Title: A multilevel natural language query platform Present Position: Graduate Student, Queen's University at Kingston
2019/7 - 2021/8 Principal Supervisor	Isaac Hogan (Completed) , Queen's University at Kingston Thesis/Project Title: Human Activity Recognition Present Position: Looking for job
2019/5 - 2021/5 Principal Supervisor	Yuhao Chen (Completed) , Queen's University at Kingston Thesis/Project Title: A cognitive interactive chat bot Present Position: PhD Student, Queen's University
2018/7 - 2020/4 Principal Supervisor	Jason Lam (Completed) , Queen's University at Kingston Thesis/Project Title: Knowledge mining from unstructured medical textdata Present Position: MSc Student, Queen's University at Kingston
2018/5 - 2020/4 Co-Supervisor	Mohammad Gasmallah (Completed) , Queen's University at Kingston Thesis/Project Title: Video object detection with face recognition Present Position: Animation R&D Programmer - Computer Vision, Rockstar Games
2016/9 - 2018/8 Principal Supervisor	Tariq Abughofa (Completed) , Queen's University at Kingston Thesis/Project Title: Dynamic graph processing with streaming data Present Position: Data Engineer, Upgrade Inc.

Doctorate [n=11]

2024/1 - 2028/12
Principal Supervisor
Farida Mohammad (In Progress) , Queen's School of Computing
Student Degree Expected Date: 2028/12
Thesis/Project Title: Medical data analytics
Present Position: PhD Student, Queen's School of Computing

2023/9 - 2027/8
Principal Supervisor
Aman Anand (In Progress) , Queen's School of Computing
Student Degree Expected Date: 2027/8
Thesis/Project Title: Video and IoT based Human Activity Recognition
Present Position: Doctoral student, Queen's School of Computing

2023/9 - 2027/8
Principal Supervisor
Amir Eskandari (In Progress) , Queen's School of Computing
Student Degree Expected Date: 2027/8
Thesis/Project Title: Voice and signal processing with graph knowledge base for efficient knowledge linking for communication
Present Position: PhD Student, Queen's School of Computing

2022/9 - 2026/8
Principal Supervisor
Elyas Rashno (In Progress) , Queen's School of Computing
Student Degree Expected Date: 2026/8
Thesis/Project Title: Multimodal data analytics to enhance machine perception using audio, video and text data analytics
Present Position: PhD Student, Queen's School of Computing

2021/9 - 2025/8
Principal Supervisor
Yuhao Chen (In Progress) , Queen's University
Student Degree Expected Date: 2025/8
Thesis/Project Title: Text and voice analytics to enhance machine cognition and response generation for cloud service provisioning
Present Position: PhD Student, Queen's School of Computing

2020/9 - 2024/8
Principal Supervisor
Mojtaba Moattari (In Progress) , Queen's University
Student Degree Expected Date: 2024/8
Thesis/Project Title: Multimodal data fusion using concept graph for advanced machine cognition
Present Position: PhD Student, Queen's School of Computing

2020/9 - 2024/8
Principal Supervisor
Ahmed Harby (In Progress) , Queen's University
Student Degree Expected Date: 2024/8
Thesis/Project Title: Intelligent process management and automation with multilevel hierarchical knowledge management system
Present Position: PhD Student, Queen's School of Computing

2019/9 - 2023/4
Principal Supervisor
Donghao Qiao (Completed) , Queen's University
Thesis/Project Title: Enabling cooperative cognition in autonomous vehicles through multimodal data transfer and fusion
Present Position: Researcher at Geotab, ON, Queen's School of Computing

2018/9 - 2021/4
Principal Supervisor
Trivedi, Priyanka (All But Degree) , Queen's University at Kingston
Thesis/Project Title: Pattern mining for storage management of massive IoT data
Present Position: PhD Candidate, Queen's University at Kingston

2017/9 - 2021/8
Principal Supervisor
Kedwan, Ftoon (All But Degree) , Queen's University at Kingston
Student Degree Expected Date: 2021/8
Thesis/Project Title: A hybrid knowledge management framework
Present Position: PhD Candidate, Queen's University at Kingston

2017/9 - 2023/8
Principal Supervisor
Sazia Mahfuz (Completed) , Queen's University at Kingston
Thesis/Project Title: A smart data profiling framework
Present Position: Assistant Professor, Acadia University

Post-doctorate [n=3]

2020/9 - 2021/12 Principal Supervisor	Hasan Zafari (Completed) , Queen's University Thesis/Project Title: Medical data analytics Present Position: Machine learning engineer, Quantifi
2018/9 - 2020/8 Co-Supervisor	Hasan Zafari (Completed) , Queen's University at Kingston Thesis/Project Title: Defining Post Traumatic Stress Disorder (PTSD) in Primary Care Electronic Medical Record (EMR) Data to Explore Prevalence, Patient Characteristics and Primary Care Experiences of Veterans, Families of Military Service Members and the General Population Present Position: Machine learning engineer, Quantifi
2017/11 - 2020/10 Principal Supervisor	Haruna Isah (Completed) , Queen's University at Kingston Thesis/Project Title: A Multilevel Streaming Data Analytics Infrastructure for Predictive Analytics Present Position: Research Associate, Canadian Institute for Cybersecurity (CIC)

Event Administration

2022/8 - 2023/7	Program Chair, Canadian Conference on Artificial Intelligence (CAIAC) 2023, Conference, 2023/6 - 2023/6
2021/9 - 2022/8	Program Chair, IEEE International Conference on Digital Health (ICDH) 2022, Conference, 2022/7 - 2022/7
2021/2 - 2021/12	Program Chair, 2021 CASCONxEVOKE, Conference, 2021/11 - 2021/11
2021/9 - 2021/9	Session Chair, IEEE ICDH Regular Paper Session, Conference, 2021/9 - 2021/9
2021/9 - 2021/9	Session Chair, 2021 IEEE ICDH Invited Paper Session, Conference, 2021/9 - 2021/9
2020/9 - 2021/9	Program Chair, 2021 IEEE International Conference on Digital Health at IEEE Services Cogress, Conference, 2021/9 - 2021/9
2019/11 - 2019/11	Chair and organizer, Deep Learning: Introduction and Hands-on, Workshop, 2019/11 - 2019/11
2018/10 - 2018/12	Chair, Large Scale Multi-level Streaming Data Analytics, Workshop, 2018/10 - 2018/11

Organizational Review Activities

2020/3 - 2020/4	Reviewer of AI Honors Degree Program for PEQAB, Durham College Review the application for starting a new Honors degree program on Artificial Intelligence as an expert in the area.

Knowledge and Technology Translation

2017/7 - 2018/8 Research Supervisor, Technology, Product, Process, Service Improvement/Development Group/Organization/Business Serviced: Public
Target Stakeholder: General Public
Outcome / Deliverable: Software code for text clustering shared in open source Github https://github.com/mattsherar/Apache-Spark-KM-PSO
Evidence of Uptake/Impact: https://github.com/mattsherar/Apache-Spark-KM-PSO
References / Citations / Web Sites: Research lab website http://cs.queensu.ca/~farhana/bam-lab/projects/
Activity Description: Code generated by supervised student Matthew Sherar for text clustering on Spark using Particle Swarm Optimization algorithm shared with public on Github

Committee Memberships

2017/3 Committee Member, SOSCIP Scientific Advisory Committee, Southern Ontario Smart Computing Innovation Platform (SOSCIP)

2015/7 - 2018/6 Committee Member, Technical Program Committee, International Conference on Cloud Computing and Services Science (CLOSER)

2011/7 - 2018/6 Committee Member, Technical Program Committee, ACM Symposium on Applied Computing (SAC), Cloud Computing track

2016/4 - 2018/4 Committee Member, Technical Program Committee, IBM Centers for Advanced Studies Conference (CASCON)

2017/2 - 2018/1 Committee Member, International Conference on Applied Cognitive Computing (ACC'17), International Conference on Applied Cognitive Computing (ACC'17)
Member of the technical program committee Review research papers

2017/2 - 2018/1 Committee Member, International Conference on Health Informatics and Medical Systems (HIMS'17), International Conference on Health Informatics and Medical Systems (HIMS'17)
Review research papers as a member of the technical program committee of the conference.

2017/2 - 2018/1 Committee Member, International Conference on Advances in Big Data Analytics (ABDA'17), International Conference on Advances in Big Data Analytics (ABDA'17)
Member of technical program committee Review of research papers

2017/2 - 2018/1 Committee Member, International Workshop on Uncertainty in Cloud Computing (UCC'17) with Dexa'17, International Conference on Database and Expert Systems Applications
Member of the technical program committee Review research papers

2017/2 - 2018/1 Committee Member, International Conference on Grid, Cloud, and Cluster Computing (GCC'17), International Conference on Grid, Cloud, and Cluster Computing (GCC'17)
Member of the technical program committee Review research papers

Other Memberships

2016/8 Member, INSTICC (Institute for Systems and Technologies of Information, Control and Communication)

2015/6 Member, IEEE Computer Society

2010/5 Licensed Member, Professional Engineers of Ontario

Presentations

1. (2019). Streaming Data Analytics to Cognitive Machine Intelligence. Annual R2i Summit, Montreal, Canada
   Main Audience: Researcher
   Invited?: Yes, Keynote?: No
2. (2018). Big Data to Machine Intelligence. International Conference on Networking, Systems and Security (NSyS), Dhaka, Bangladesh
   Main Audience: Researcher
   Invited?: Yes, Keynote?: No
3. (2018). Content-based File Type Identification. IEEE International Conference on Electrical and Computer Engineering, Dhaka, Bangladesh
   Main Audience: Knowledge User
   Invited?: Yes, Keynote?: No
4. (2018). Predictive Object Detection. IEEE Information Technology, Electronics and Mobile Communication Conference, Vancouver, Canada
   Main Audience: Researcher
   Invited?: Yes, Keynote?: No
5. Roychoudhury A. (2018). Streaming Data Processing for Cognitive Systems and Internet of Strings. International Conference on Networking, Systems and Security, Dhaka, Bangladesh
   Main Audience: Knowledge User
   Invited?: Yes, Keynote?: Yes
6. Levin Y, Marshall J, Murakami-Wood D. (2018). Cognitive Intelligence. Principal's Symposium: Imaging our Digital Future, Kingston, Canada
   Main Audience: Knowledge User
   Invited?: Yes, Keynote?: Yes

Broadcast Interviews

2018/05/08 - 2019/10/25	Queen's Computing professor awarded Canada Foundation for Innovation Funding, News-Events, Queen's News Media
2017/01/16 - 2019/10/24	Introducing the first tenure-track computing professor in 10 years, Queen's Journal, Queen's Journal

Publications

Journal Articles

1. Ismail, Z., Wilson, M., Khalifa, H., Belovich, D., Shaw, E., McMullen, S., *Chen, Y., *Sadman, N., *Cai, J., Zulkernine, F., Barber, D. (2024). Diagnosis and management of Alzheimer's disease inprimary care: a real-world study in Ontario, Canada. Canadian Family Physician.
   Submitted
   Refereed?: Yes
2. *Qiao, D., Zulkernine, F. (2024). CoBEVFusion: Cooperative Perception with LiDAR-Camera Bird's Eye View Fusion. IEEE Transactions on Intelligent Vehicles.
   Submitted
   Refereed?: Yes

3. *Harby, A., Zulkernine, F. (2024). Data Lakehouse: A Survey and Experimental Study. Information Systems.
Submitted
Refereed?: Yes

4. *Qi, H., *Zhang, Z., Zulkernine, F. (2024). SKELETRACK: Efficient tracking of human skeleton in blurry videos for activity recognition. IEEE Transaction on Image Processing.
Submitted
Refereed?: Yes

5. *Chen, Y., *Cai, J., *Sadman, N., Zulkernine, F., **Queenan, J., **Barber, D. (2024). PLeDO: Pain Level Detection for Osteoarthritis from EMR Data. IEEE Transactions on Emerging Topics in Computing.
Submitted
Refereed?: Yes, Open Access?: No

6. *Qi, H., *Zhang, Z., Zulkernine, F. (2024). Swin PoseFormer: A human activity recognition model using skeleton heatmaps. IEEE Access.
Submitted
Refereed?: Yes, Open Access?: Yes

7. *Qiao, D., *Ayesha, A., Zulkernine, F., ~Masroor, R., ~Rasool, R. ~Jaffar, N. (2022). Revise: Remote Vital Signs Measurement Using Smart phone Video Camera. IEEE Access. 10(1): 131656-131670.
Published
Refereed?: Yes

8. **Singer, A., **Kosowan, L., Muthumuni, D., Katz, A., *Zafari, H., Zulkernine, F., Richardson, J.D., Price, **M., Queenan, J., Sareen, J., **Williamson, T. (2022). Characterizing primary care patients with posttraumatic stress disorder using electronic medical records: a retrospective cross-sectional study. Family Practice. Dec 9: cmac139.
Published
Refereed?: Yes

9. Sun, S., Lupton, K., *Batch, K., Nguyen, H., Gazit, L., Gangai, N., Cho, J., Nicholas, K., Zulkernine, F., Sevilimedu, V., **Simpson, A., ~Do, R. (2022). Natural Language Processing of Large-Scale Structured Radiology Reports to Identify Oncologic Patients With or Without Splenomegaly Over a 10-Year Period. JCO Clinical Cancer Informatics. 6: e2100104.
Published
Refereed?: Yes, Open Access?: Yes

10. *Batch, K., *Yue, J., Darcovich, A., Lupton, K., Liu, C., Woodlock, D., Amine, M., Andrieu, P., Gazit, L., Nguyen, G., Zulkernine, F., ~Do, R., **Simpson, A. (2022). Developing a Cancer DigitalTwin: Supervised Metastases Detection from Consecutive Structured RadiologyReports. Frontiers in Artificial Intelligence, section Medicine and Public Health. 5: 2624-8212.
Published
Refereed?: Yes, Open Access?: Yes

11. **Kosowan L, **Singer A, Zulkernine F, *Zafari H, Nesca M, Muthumuni D. (2022). Pan-Canadian Electronic Medical Record Diagnostic and Unstructured Text Data for Capturing PTSD: Retrospective Observational Study. JMIR Medical Informatics. 10(12): e41312.
Published
Refereed?: Yes, Open Access?: Yes

12. Andrieu, P., Pernicka, J., Lupton, K., *Batch, K., Zulkernine, F., **Simpson, A., Taya, M., Lior, G., Huy, N., Nicholas, K., Natalie, G., Srinivasa, S., Paroder, V., Bates, D., Yaeger, R., ~Do, R. (2022). Natural language processing of Computed Tomography reports to label metastatic phenotypes with prognostic significance in patients with colorectal cancer. JCO Clinical Cancer Informatics. 6(6): e2200014.
Published
Refereed?: Yes, Open Access?: Yes

13. *Kolisnik, B., *Hogan, I., Zulkernine, F. (2021). Hierarchical Classification of Fashion ImagesUsing Branching Convolutional Neural Networks. Expert Systems With Applications. 182(0957-4174): 115195.
Published
Refereed?: Yes, Open Access?: No

14. Do, Richard, Lupton, K., Andrieu, P.C., Luthra, A.; Taya, M., *Batch, K., Nguyen, H., Rahurkar, P., Gazit, L., Nicholas, K., Fong, C., Gangai, N., Schultz, N., Zulkernine, F., Sevilimedu, V., Juluru, K., **Simpson, A., Hricak, H. (2021). Patterns of Metastatic Disease in Patients with Cancer Derived from Natural Language Processing of Structured CT Radiology Reports over a Ten-Year Period. Radiology. 301(1): 0.
Published
Refereed?: Yes, Open Access?: Yes

15. *Zafari, H., **Kosowan, L., Zulkernine, F., *Langlois, S., **Singer, A.,. (2021). AI in predicting COPD in the Canadian population. Bio-systems. 211: 104585.
Published
Refereed?: Yes

16. *Zafari, H., **Kosowan, L., Zulkernine F., **Singer, A. (2021). Diagnosing post-traumatic stress disorder using electronic medical record data. Health Informatics Journal. 27(4): 1-20.
Published
Refereed?: Yes

17. *Zafari, H., Zulkernine F., **Kosowan L., **Singer A. (2021). Text Encoding Models for Medical Data Analytics. Expert Systems With Applications. 1(1): 1.
Submitted
Refereed?: Yes

18. **Kosowan, L., **Singer A, *Zafari, H., Zulkernine, F. (2020). Computational Methods for Identification of PTSD in Health System Data: Protocol for a Scoping Review. Open Science Framework (OSF). 1: 1-3.
Published
Refereed?: No, Open Access?: Yes

19. *Isah H, *Abughofa T, *Mahfuz S, *Ajerla D, Zulkernine F. (2019). Processing Real Time Data Streams: A Survey of Streaming Data Processing Engines. IEEE Transactions on Data and Knowledge Engineering. 1(1): 1-17.
Published
Refereed?: Yes, Open Access?: Yes

20. *Ajerla D, *Mahfuz S, Zulkernine F. (2019). A Real-Time Patient Monitoring Framework for Fall Detection. Wireless Communications and Mobile Computing: Special issue on Mobile Technologies and Sensor Networks in Healthcare Environments (MSHE). 2019: 1-10.
Published
Refereed?: Yes, Open Access?: Yes

21. *Leung T, Zulkernine F, *Isah, H. (2019). The Use of Virtual Reality in Enhancing Interdisciplinary Research and Education. Journal of Systemics, Cybernetics and Informatics: JSCI. 16(6): 4-9.
Published
Refereed?: Yes

22. Kalaydina RV, Zhou H, Markvicheva E, Burov S, Zulkernine F, **Szewczuk, M. (2019). Impact of fucosylation on self-assembly of 3D multicellular prostate and breast tumor spheroids by using cyclo-RGDfK(TPP) peptide and image object detection. OncoTargets and Therapy. 12: 11153-11173.
Published
Refereed?: Yes, Open Access?: No

23. *Shah D, Zulkernine, F. (2018). Stock Market Analysis: A Review and Taxonomy of Prediction Techniques. MDPI International Journal of Financial Studies. 1: 1-10.
Published
Refereed?: Yes, Open Access?: No

Book Chapters

1. *Lam, J., Kosowan L., *Zafari H., Peeler W., *Gasmallah M., Zulkernine F., Singer A. (2020). Using Deep Learning with Canadian Primary Care Data for Disease Diagnosis. Elloumi, Mourad. Deep Learning for Biomedical Data Analysis: Techniques, Approaches, and Applications. (3): 1-30.
   Published, Springer
   Refereed?: Yes

Conference Publications

1. *Pepin, I., **Alaca, F., Zulkernine, F. (2024). Privacy-Preserving Multi-Party Keyword-Based Classification of Unstructured Text Data. DCOSS-IOT. International Conference on Distributed Computing in Smart Systems and Internet of Things, Abu Dhabi,
   Conference Date: 2024/4
   Paper
   Accepted
   Refereed?: Yes, Invited?: No
2. *Rashno E., Safarzadehvahed, M., Zulkernine, F., **Givigi, S. (2023). Image Caption Generation Based on Image-Text Matching Schema in Deep Reinforcement Learning. IEEE SSCI. In Computational Intelligence in Cyber Security (CICS) In IEEE SSCI, Mexico City, Mexico
   Conference Date: 2023/12
   Paper
   Published
   Refereed?: Yes, Invited?: No
3. *Sadman, N., Hasan, KA, *Rashno, E., **Alaca, F., **Tian, Y., Zulkernine, F. (2023). Vulnerability of Open-source Face Recognition Systems towards Blackbox Attacks: A Case Study with InsightFace. IEEE SSCI. In Computational Intelligence in Cyber Security (CICS) in IEEE SSCI, Mexico City, Mexico
   Conference Date: 2023/12
   Paper
   Published
   Refereed?: Yes, Invited?: No
4. *Luo, Z., Zulkernine, F. (2023). An Intelligent Email Classification System. IEEE SSCI. In Feature Analysis, Selection and Learning in Image and Pattern Recognition (FASLIP) symposium at conference SSCI (Symposium Series of Computational Intelligence), Mexico City, Mexico
   Conference Date: 2023/12
   Paper
   Published
   Refereed?: Yes, Invited?: No
5. *Luo, R., Rivest, F., and Zulkernine, F. (2023). I3D Light - A Simple Motion Information Stream for I3D. CanAI. Canadian AI, Montreal, Canada
   Conference Date: 2023/7
   Paper
   Published
   Refereed?: Yes, Invited?: No
6. *Chen, Y., Shu, B., Moattari, M., Zulkernine, F., Queenan, J., Barber, D. (2023). SPaDe: A Synonym-based Pain-level Detection Tool for Osteoarthritis. IEEE ICDH WIP. IEEE International Conference on Digital Health (ICDH), Chicago,
   Conference Date: 2023/7
   Paper
   Published
   Refereed?: Yes, Invited?: No

7. *Gasmallah, M., Rivest, F., Zulkernine, F., and Breton, M. (2023). Quantifying Path Smoothness in Video Object Tracking by Detection. CanAI. Canadian AI, Montreal, Canada
Conference Date: 2023/7
Paper
Published
Refereed?: Yes, Invited?: No

8. *Woo, M., Zulkernine, F., & Abdulsalam, H. M.,. (2023). Examining Feasibility and Efficacy of Traditional Stream Clustering Algorithms. IEEE COMPSAC. IEEE Computer Society Signature Conference on Computers, Software, and Applications (COMPSAC), Torino, Italy
Conference Date: 2023/6
Paper
Published
Refereed?: Yes, Invited?: No

9. *Harby, A., Zulkernine, F. (2023). A Comparative Analysis of Graph Neural Networks for Fake New Detection. IEEE COMPSAC. IEEE Computer Society Signature Conference on Computers, Software, and Applications (COMPSAC), Torino, Italy
Conference Date: 2023/6
Paper
Published
Refereed?: Yes, Invited?: No

10. *Rashno, E., Zulkernine, F. (2023). Efficient Video Captioning with Frame Similarity-based Filtering. DEXA. Database and Expert Systems Applications (DEXA) Conference, Penang, Malaysia
Conference Date: 2023/6
Paper
Published
Refereed?: Yes, Invited?: No

11. *Qiao, D. and Zulkernine, F. (2023). Adaptive Feature Fusion for Cooperative Perception using LiDAR Point Clouds. IEEE. IEEE/CVF Winter Conference on Applications of Computer Vision (WACV), Hawaii,
Conference Date: 2023/1
Paper
Published
Refereed?: Yes, Invited?: No

12. *Harby, A., Zulkernine, F. (2022). From data warehouse to lakehouse: a comparative review. IEEE Big Data. IEEE Big Data, Osaka, Japan
Conference Date: 2022/12
Paper
Published
Refereed?: Yes, Invited?: No

13. *Ayesha, A.H., *Qiao, D. and Zulkernine, F. (2022). A web application for experimenting and validating remote measurement of vital signs. IEEE iiWAS. International Conference on Information Integration and Web Intelligence (iiWAS), virtual,
Conference Date: 2022/12
Paper
Published
Refereed?: Yes, Invited?: No

14. *Mahfuz, S., Zulkernine, F. (2022). A preliminary study on pattern reconstruction for optimal storage of wearable sensor data. NeurIPS. NeurIPS workshop on learning from time series for health, New Orleans, United States of America
Conference Date: 2022/11
Paper
Published
Refereed?: Yes, Invited?: No

15. Muthumuni, D., Kosowan, L., Singer, A., *Zafari, H., Zulkernine, F., Katz, A., Sareen, J., Richardson. J., D., Wong, S., Queenan, J., Wolfrom, B., Williamson, T. (2022). Characterizing Post-traumatic Stress Disorder in Primary Care Using Electronic Medical Records: a retrospective cross-sectional study. Annual North American Primary Care Research Group (NAPCRG) Conference on Practice-based Research Network (PBRN), virtual,
Conference Date: 2022/6
Paper
Published
Refereed?: Yes, Invited?: No

16. *Zafari, H.; *Li, J.; Zulkernine, F.; Kosowan, L. and Singer, A. (2022). Predictive Modeling of Diabetes using EMR Data. HEALTHINF-BIOSTEC. HEALTHINF-BIOSTEC, virtual,
Conference Date: 2022/2
Paper
Published
Refereed?: Yes, Invited?: No

17. *Fu, Z., *Gu, X., *Fu, J., *Moattari, M., Zulkernine, F. (2021). Predicting the Length of Stay of Patients in Hospitals. IEEE BIBM 2021 Workshop on Artificial Intelligence & Big Data vs Pandemics, virtual,
Conference Date: 2021/12
Paper
Published
Refereed?: Yes, Invited?: No

18. *Chen, Y., Zulkernine, F. (2021). BIRD-QA: A BERT-based Information Retrieval Approach to Domain Specific Question Answering. IEEE CogMI. IEEE Workshop on Human-in-the-Loop Methods and Future of Work in BigData (IEEE HMData), Virtual,
Conference Date: 2021/12
Paper
Published
Refereed?: Yes, Invited?: No

19. *Hogan, I., *Qiao, D., *Luo, R., *Moattari, M., *Carthy., A., Rivest, F., Zulkernine, F., Brenton. M.,. (2021). FireWarn: Recognizing Fire Hazards Using ComputerVision, Best paper award,. IEEE CogMI, virtual,
Conference Date: 2021/12
Paper
Published
Refereed?: Yes, Invited?: No

20. *Qiao, D., Zulkernine, F. (2021). Feature Pyramid Networks for Drivable Area Detection. IEEE Big Data. IEEE Big Data, Virtual,
Conference Date: 2021/12
Paper
Submitted
Refereed?: Yes, Invited?: No

21. *Qiao, D., Zulkernine, F. (2021). Drivable Area Detection Using Deep Learning Models for Autonomous Driving. IEEE International Conference on Big Data (Big Data), virtual,
Conference Date: 2021/12
Paper
Published
Refereed?: Yes, Invited?: No

22. *Ayesha, A., *Qiao, D. , Zulkernine, F.,. (2021). Heart Rate Monitoring using PPG with Smartphone Camera. IEEE BIBM workshop on Artificial Intelligence Techniques for BioMedicine and HealthCare, virtual,
Conference Date: 2021/12
Paper
Published
Refereed?: Yes, Invited?: No

23. Muthumuni, D., **Kosowan, L., **Singer, A., *Zafari H, Zulkernine F.,. (2021). Understanding Post-Traumatic Stress Disorder Using Electronic Medical Records. CFPC Annual Family Medicine Forum, virtual,
Conference Date: 2021/11
Paper
Published
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