Kenneth Brezinski

Curriculum Vitae

brezinkk@myumanitoba.ca
kbrezinski.github.io

Research and Industry Experience

05/22-08/22 **Incoming Data Scientist Intern,** *Microsoft*, Redmond, WA

- Working with the Windows Defender team on developing Machine Learning tools to alert to malicious threats on Windows OS

05/21-08/21 **Applied Research Scientist Intern**, *Amazon Web Services*, New York, NY

- Worked with the Amazon GuardDuty threat detection research team developing Machine Learning tools

since 10/19 **Research Intern Lead,** *Canadian Tire Corp.,* Winnipeg, MB

- Develop in-house toolboxes and machine learning pipelines for Malware detection of enterprise security threats

Education

since 08/18 **Doctor of Philosophy,** *University of Manitoba*, Winnipeg, MB.
Electrical and Computer Engineering

01/16-09/18 **Master of Science,** *University of Manitoba*, Winnipeg, MB.
Civil Engineering

08/10-08/15 **Bachelor of Science,** *University of Winnipeg*, Winnipeg, MB.
Chemistry

Fellowships and Awards

2022 **Emily and Lynette Hain Graduate Engineering Scholarship**
2021-2022 **University of Manitoba Graduate Fellowship**
2021-2022 **Edward R. Toporeck Graduate Fellowship in Engineering**
2021 **Mitacs Globalink - JSPS**
2021 **A. Keith Dixon Graduate Scholarship in Engineering**
2021-2022 **Philip and Marjorie Eckman Scholarship in Engineering**
2019-2022 **Mitacs Accelerate – Ph.D**
2019 **NSERC – CGS M**
2016 **Mitacs Accelerate – M.Sc**

Journal and Book Publications

B5 **Incorporating Topological Complexity into a Multilayer Perception,** Brezinski, K., Ferens, K., 2022. Transactions on Computational Science & Computational Intelligence. Springer Nature

J7 **Metamorphic Malware and Obfuscation - A Survey of Techniques, Variants and Generation Kits,** Brezinski, K., Ferens, K., 2022. Array (journal); submitted, under consideration

B4 **Transformers – Malware in Disguise,** Brezinski, K., Ferens, K., 2021. Transactions on Computational Science & Computational Intelligence. Springer Nature (book)

B3 **Sandy Toolbox: A Framework for Dynamic Malware Analysis and Model Development,** Brezinski, K, Ferens, K., 2021. Transactions on Computational Science & Computational Intelligence. Springer Nature (book)

B2 **An Adaptive Tribal Topology for Particle Swarm Optimization,** Brezinski, K, Ferens, K., 2020. Transactions on Computational Science & Computational Intelligence. Springer Nature (book)

J6 **Ozonation of natural organic matter and aquatic humic substances: the effects of ozone on the structural characteristics and subsequent trihalomethane formation potential,** Sadrnourmohamadi, M., Brezinski, K, Gorczyca, B., 2020. Water Quality Research Journal of Canada (journal)

J5 **Population Based Equilibrium in Hybrid SA/PSO for Combinatorial Optimization,** Brezinski, K, Ferens, K., 2020. International Journal of Software Science and Computational Intelligence (journal)

B1 **Cognitive Hybrid PSO/SA Combinatorial Optimization,** Brezinski, K, Ferens, K., 2020. Advances in Security, Networks, and Internet of Things (book)

J4 **Multi-spectral characterization of natural organic matter (NOM) from Manitoba surface waters using high performance size exclusion chromatography (HPSEC),** Brezinski, K., Gorczyca, B., 2018. Chemosphere (journal)

J3 **An overview of the uses of high-performance size exclusion chromatography (HPSEC) in the characterization of natural organic matter (NOM) in potable water, and ion-exchange applications,** Brezinski, K., Gorczyca, B., 2018. Chemosphere (journal)

J2 **Ion-Exchange for Trihalomethane control in potable water treatment – A municipal water treatment case study in Rainy River, Ontario, Canada,** Brezinski, K, Sadrnourmohamadi, M., Gorczyca, B., 2018. Water Quality Research Journal of Canada (journal)

J1 **Effect of total organic carbon and aquatic humic substances on the occurrence of lead at the tap.** Winning, L.D., Gorczyca, B., Brezinski, K., 2017. Water Quality Research Journal of Canada (journal)

Conference Publications

C2 **Complexity-Based Lambda Layer for Time Series Prediction,** Brezinski, K., Ferens, K., 2021. IEEE Congress on Evolutionary Computation (oral); accepted

C1 **Complexity-Based Convolutional Neural Network for Malware Classification,** Brezinski, K, Ferens, K., 2020. International Conference on Computational Science and Computational Intelligence (oral)

Students Supervised

Undergrad **Michael Guevarra,** University of Manitoba, 2019

Committees, Positions and Volunteering

since 04/17 **Reviewer**, Journal of Desalination and Water Treatment

since 11/17 **Reviewer,** Journal of Water Science and Technology

since 05/20 **Reviewer**, International Journal of Software Science and Computational Engineering

09/18 – 05/21 **Student Peer Mentor**, University of Manitoba Students' Union

since 01/19 **Language Partner Volunteer**, English Language Center

09/19 – 09/20 **Faculty of Science Mentor**, Faculty of Science

04/19-12/19 **Language Exchange Program Volunteer**, International Center

since 06/19 **President and Founder,** University of Manitoba Engineering Masters (UMEM)

since 06/20 **Personal Disaster Response Volunteer,** Canadian Red Cross

11/16-11/17 **Vice-President,** University of Manitoba Water and Environmental Foundation (UMWEF)