

PROFESSIONAL EXPERIENCE (Select)

Data Scientist, *Electronic Arts (EA)*, Canada, April 2018 – Present.

- Responsible for HD video game analytics and data modeling using machine learning and research as part of the EA's Global Analytics & Insights (GAI) team.
- Developing statistical and machine learning models and reporting data findings to senior management on frequent cadence to drive informed decision-making.

Research Assistant, *Dept. of Computing Science, University of Alberta*, Canada, September 2010 – April 2018.

- Developed health social network for patients and medics using PHP, SQL, JavaScript/AJAX, Python, with trust-preserving privacy controls and trust metrics for evaluating veracity using machine learning.
- Led team of researchers on tackling open challenges in Natural Language Processing (NLP) with deep learning, including duplicate question detection and semantic similarity.
- Implemented social media aggregation and digital epidemiology platform for Canadian Twitter users using Python, MongoDB, MySQL, and web technologies, including RESTful API access for researchers.

Machine Learning Consultant, *Stream Technologies Inc.*, Canada, January – December 2017.

- Technical consultation and programming of predictive solutions using deep neural networks and ensemble supervised learning methods on large-scale image datasets.
- Significantly improved accuracy of image classification solutions using customized dimensionality reduction via clustering, feature selection, and anomaly detection.

Data Science Intern, *Resolver Inc.*, Canada, August 2013 – May 2014.

- Worked with large-scale datasets in Microsoft SQL Server to analyze and identify emerging patterns and designed customized machine learning solutions for data warehouse analytics and prediction.
- Took leadership to create warehousing architecture blueprint for unsupervised learning and automated analytics of large-scale security incident data within the city of Edmonton.

EDUCATION

PhD Candidate Computing Science (In Progress), University of Alberta.

- Dissertation: New Perspectives on Trust in Health Social Media.

MSc Computing Science (2011), University of Alberta.

- Thesis: Content Management for Online Health Advice Sharing.

BSc Computer Science (Magna Cum Laude, 2009), American University of Nigeria.

- Senior design project: Pathway: Computer-Based Adaptive Student Evaluation.

TECHNICAL EXPERTISE (Select)

Machine Learning & NLP – Keras, TensorFlow, Gensim, Scikit-Learn, SciPy, CoreNLP, SpaCy, Azure ML.
Software Engineering – Object-Oriented Programming, Aspect Oriented Programming, Design Patterns, UML.
Programming Languages – Java, Python, C#, C++, JavaScript, PHP, ASP, VBA, .NET, SQL, HiveQL.
DevOps – Agile/Scrum methodology, unit testing, version control, continuous integration, Jenkins, GitLab.
Database Technologies – MySQL, NoSQL, MongoDB, SQL Server, OLAP Cubes, Apache Spark, Snowflake.

A Study of Canadian Tweeters and Context Prediction in Health Social Media using Applied Machine Learning. Hamman Samuel, Benyamin Noori, Sara Farazi, Osmar Zaiane. *In Proceedings of the IEEE/WIC/ACM International Conference on Web Intelligence*. Santiago, Chile, Dec. 4-6, 2018. DOI: [10.1109/WI.2018.00-85](https://doi.org/10.1109/WI.2018.00-85).

MedFact: Towards Improving Veracity of Medical Information in Social Media using Applied Machine Learning. Hamman Samuel, Osmar Zaiane. *In Proceedings of the 31st CAIAC Canadian Conference on Artificial Intelligence*. Toronto, Canada, May 8-11, 2018. DOI: [10.1007/978-3-319-89656-4_9](https://doi.org/10.1007/978-3-319-89656-4_9).

Iron Mask: Trust-Preserving Anonymity on the Face of Stigmatization in Social Networking Sites. Hamman Samuel, Osmar Zaiane. *In Proceedings of the 14th International Conference on Trust, Privacy & Security in Digital Business*. Lyon, France, Aug. 28-31, 2017. DOI: [10.1007/978-3-319-64483-7_5](https://doi.org/10.1007/978-3-319-64483-7_5).

PubMedReco: A PubMed Citations Recommender System for Real-Time Chat (Student Paper Award 2nd Place). Hamman Samuel, Osmar Zaiane. *In Proceedings of the 16th IMIA World Congress on Medical and Health Informatics*. Hangzhou, China, Aug. 21-25, 2017. DOI: [10.3233/978-1-61499-830-3-207](https://doi.org/10.3233/978-1-61499-830-3-207).

Community Question Retrieval in Health Forums. Hamman Samuel, Mi-Young Kim, Sankalp Prabhakar, Mohamed Shazan Mohamed Jabbar, Osmar Zaiane. *In Proceedings of the IEEE-EMBS International Conference on Biomedical & Health Informatics*. Orlando, USA, Feb. 16-19, 2017. DOI: [10.1109/BHI.2017.7897209](https://doi.org/10.1109/BHI.2017.7897209).

BubbleNet: An Innovative Exploratory Search and Summarization Interface with Applicability in Health Social Media (Best Paper Award). Saeed Mohajeri, Hamman W. Samuel, Osmar R. Zaiane, Davood Rafiei. *In Proceedings of the 1st International Conference on Digital Economy*. Carthage, Tunisia, April 28-30, 2016. DOI: [10.1109/ICDEC.2016.7563143](https://doi.org/10.1109/ICDEC.2016.7563143).

Golden Retriever: Question Retrieval System. Hamman W. Samuel, Mi-Young Kim, Sankalp Prabhakar, Mohamed Shazan Mohamed Jabbar. *In Proceedings of the IEEE International Conference on Healthcare Informatics*. Dallas, USA, Oct. 21-23, 2015. DOI: [10.1109/ICHI.2015.98](https://doi.org/10.1109/ICHI.2015.98).

A Repository of Codes of Ethics and Technical Standards in Health Informatics. Hamman W. Samuel, Osmar R. Zaiane. *Online Journal of Public Health Informatics*. Vol. 6, No. 2, Oct. 2014. DOI: [10.5210/ojphi.v6i2.5484](https://doi.org/10.5210/ojphi.v6i2.5484).

On Management of the Health Content Lifecycle. Hamman W. Samuel, Osmar R. Zaiane. *International Journal of Public Health Frontier*. Vol. 2, No. 2, June 2013. DOI: [10.5963/PHF0202005](https://doi.org/10.5963/PHF0202005).

Evidence-Based Trust Metrics in Web Services. Hamman W. Samuel. *In Proceedings of the IBM International Conference on Computer Science Software Engineering*. Markham, Canada, Nov. 18-20, 2013. DOI: [10.13140/RG.2.1.2035.9206](https://doi.org/10.13140/RG.2.1.2035.9206).

Findability in Health Information Websites. Hamman W. Samuel, Osmar R. Zaiane, Jane Robertson Zaiane. *In Proceedings of the IEEE-EMBS International Conference on Biomedical and Health Informatics*. Hong Kong/Shenzhen, China, Jan. 5-7, 2012. DOI: [10.1109/BHI.2012.6211681](https://doi.org/10.1109/BHI.2012.6211681).

PSST... Privacy, Safety, Security, and Trust in Health Information Websites. Hamman W. Samuel, Osmar R. Zaiane. *In Proceedings of the IEEE-EMBS International Conference on Biomedical and Health Informatics*. Hong Kong/Shenzhen, China, Jan. 5-7, 2012. DOI: [10.1109/BHI.2012.6211650](https://doi.org/10.1109/BHI.2012.6211650).

HCMS: Conceptual Description of a Health Content Management System. Hamman W. Samuel, Osmar R. Zaiane. *In Proceeding of the 3rd Workshop on Software Engineering in Health Care*. Honolulu, USA, May 22-23, 2011. DOI: [10.1145/1987993.1988000](https://doi.org/10.1145/1987993.1988000).

Fastest Association Rule Mining Algorithm Predictor (FARM-AP). Metanat HooshSadat, Hamman W. Samuel, Sonal Patel, Osmar R. Zaiane. *In Proceedings of the 4th International C* Conference on Computer Science and Software Engineering*. Montreal, Canada, May 16-18, 2011. DOI: [10.1145/1992896.1992902](https://doi.org/10.1145/1992896.1992902).

Towards a Definition of Health Informatics Ethics. Hamman W. Samuel, Osmar R. Zaiane, Dick Sobsey. *In Proceeding of the ACM International Health Informatics Symposium*. Arlington, USA, Nov. 11-12, 2010. DOI: [10.1145/1882992.1883029](https://doi.org/10.1145/1882992.1883029).