

HAMMAN W. SAMUEL

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PROFESSIONAL EXPERIENCE (Selected)

Senior Data Analyst, *BioWare Corp.*, Edmonton, Canada, April 2018 – Present.

- Responsible for data analytics, game analytics, data modeling, forecasting, research and mentoring as part of the Electronic Arts (EA) Global Analytics & Insights (GAI) team.

Sessional Instructor/Adjunct Professor, *Concordia University of Edmonton*, Canada, July 2014 – April 2018.

- Designed and administered master's level courses on Operating Systems Security, Securing an E-Commerce Infrastructure, Cryptology & Secure Network Communications, and served as student research supervisor.

Research Assistant, *University of Alberta*, Edmonton, 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 and algorithmics.

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

- Provided technical consultation on predictive solutions using linear regression for large-scale datasets containing image meta data, and coded custom Python scripts for feature extraction, anomaly detection, and clustering.

Data Science Intern, *Resolver Inc.*, Edmonton, 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.

Teaching Assistant, *University of Alberta*, Canada, September 2009 – April 2015.

- Administered lab sessions on undergraduate courses: Nonprocedural Programming Languages, Security in a Networked World, Introduction to Computing Science, and Introduction to the Foundations of Computation.

Software Engineer, *American University of Nigeria*, September 2005 – April 2009.

- Worked with team to design, test, deploy and maintain enterprise software for academic data management & decision support, including web-based applications and desktop client applications using VBA, PHP, and SQL.

EDUCATION

PhD Candidate Computing Science, University of Alberta, September 2011 – Present.

MSc Computing Science, University of Alberta, September 2009 – August 2011.

BSc Computer Science (Magna Cum Laude), American University of Nigeria, September 2005 – April 2009.

LEADERSHIP AND AWARDS (Selected)

President, Computing Science Graduate Student Association, University of Alberta, Canada (2014 – 2015).

Chief Returning Officer, Graduate Students' Association, University of Alberta, Canada (2014 – 2015).

Vice President, American University of Nigeria Honors Society (2007 – 2009).

Professional Development Award, University of Alberta, Canada (2011, 2013, 2015, 2017).

Doctoral Recruitment Scholarship, University of Alberta, Canada (2011 – 2012).

Mary Louise Imrie Graduate Student Award, University of Alberta, Canada (2010).

TECHNICAL EXPERTISE (Selected)

Machine Learning & Data Analytics Toolset – Keras, TensorFlow, Gensim, Scikit-Learn, SciPy, Dundas, Tableau.

Database & Big Data Technologies – MySQL, MongoDB, SQL Server, OLAP Cubes, Apache Spark, Snowflake.

IaaS and PaaS Cloud Computing – OpenShift, Heroku, Digital Ocean, Cybera, Azure, Docker, Kubernetes.

Server- & Client-Side Languages – Python, Java, C#, JavaScript, PHP, ASP, VBA, .NET, SQL, HiveQL.

Software Engineering – Object-Oriented Programming, Aspect Oriented Programming, Design Patterns, UML.

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 (WI)*. Santiago, Chile, Dec. 4-6, 2018. DOI: 10.1109/WI.2018.00-85, *IEEE Xplore*.

Reducing Traffic Congestion for Machine to Machine Type Communication Over 4G-LTE Network by Decreasing Total Bytes Transmitted. Jitto Joseph, Ron Ruhl, Hamman Samuel. *In Proceedings of the 17th IEEE International Conference on Trust, Security and Privacy in Computing and Communications (TrustCom)*. New York, USA, July 31-Aug. 3, 2018. DOI: 10.1109/TrustCom/BigDataSE.2018.00259, *IEEE Xplore*.

An Implementation of Hierarchical Intrusion Detection Systems Using Snort and Federated Databases. Sarvjot Kaur Kang, Dale Lindskog, Hamman Samuel. *In Proceedings of the 17th IEEE International Conference on Trust, Security and Privacy in Computing and Communications (TrustCom)*. New York, USA, July 31-Aug. 3, 2018. DOI: 10.1109/TrustCom/BigDataSE.2018.00216, *IEEE Xplore*.

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 (CAI)*. Toronto, Canada, May 8-11, 2018. DOI: 10.1007/978-3-319-89656-4_9, *SpringerLink*.

Impact of Paranoia Levels on the Effectiveness of the ModSecurity Web Application Firewall. Jatesh Jagraj Singh, Hamman Samuel, Pavol Zavarsky. *In Proceedings of the IEEE International Conference on Data Intelligence and Security (ICDIS)*. South Padre Island, USA, April 8-10, 2018. DOI: 10.1109/ICDIS.2018.00030, *IEEE Xplore*.

Attack Tree for Modelling Unauthorized EMV Card Transactions at POS Terminals. Dilpreet Singh, Ron Ruhl, Hamman Samuel. *In Proceedings of the 4th International Conference on Information Systems Security and Privacy (ICISSP)*. Funchal, Portugal, Jan. 22-24, 2018. DOI: 10.5220/0006723304940502.

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 (TrustBus)*. Lyon, France, Aug. 28-31, 2017. DOI: 10.1007/978-3-319-64483-7_5, *SpringerLink*.

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 (MedInfo)*. Hangzhou, China, Aug. 21-25, 2017. DOI: 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 (BHI)*. Orlando, Florida, USA, Feb. 16-19, 2017. DOI: 10.1109/BHI.2017.7897209, *IEEE Xplore*.

Supporting Digital Epidemiology in Alberta via Twitter Tracking. Hamman Samuel, Osmar Zaiane, Patricia Martz. *Presented at the IEEE-EMBS International Conference on Biomedical and Health Informatics (BHI)*. Orlando, Florida, USA, Feb. 16-19, 2017.

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 (ICDEc)*. Carthage, Tunisia, April 28-30, 2016. DOI: 10.1109/ICDEC.2016.7563143, *IEEE Xplore*.

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 (ICHI)*. Dallas, Texas, USA, Oct. 21-23, 2015. DOI: 10.1109/ICHI.2015.98, *IEEE Xplore*.

A Repository of Codes of Ethics and Technical Standards in Health Informatics. Hamman W. Samuel, Osmar R. Zaiane. *Online Journal of Public Health Informatics (OJPHI)*. Vol. 6, No. 2, Oct. 2014. PMID: 25422725, DOI: 10.5210/ojphi.v6i2.5484, *PubMed*.

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

PEER-REVIEWED PUBLICATIONS (Continued)

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

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

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

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

Fastest Association Rule Mining Algorithm Predictor (FARM-AP). Metanat HooshSadat, Hamman W. Samuel, Sonal Patel, Osmar R. Zaïane. In *Proceedings of the 4th International C* Conference on Computer Science and Software Engineering (C3S2E)*. Montreal, Canada, May 16-18, 2011. DOI: 10.1145/1992896.1992902, *ACM DL*.

Towards a Definition of Health Informatics Ethics. Hamman W. Samuel, Osmar R. Zaïane, Dick Sobsey. In *Proceeding of the ACM International Health Informatics Symposium (IHI)*. Arlington, Virginia, USA, Nov. 11-12, 2010. DOI: 10.1145/1882992.1883029, *ACM DL*.

ACADEMIC COMMUNITY SERVICE

Invited Reviewer

Computational Intelligence Journal, 2017, 2018.

Journal of the American Medical Informatics Association (JAMIA), 2018.

Health Informatics Journal, 2015, 2017, 2018.

Technical Program Committee (TPC)

IMIA World Congress of Medical and Health Informatics (MedInfo), 2018.

IEEE International Workshop on Big Data Analytics for Smart and Connected Health (CHASE), 2016.

IEEE International Conference on Machine Learning and Applications (ICMLA), 2015.

International Conference on Advances in Computing, Communications and Informatics (ICACCI), 2013, 2014.

IEEE Colloquium on Business, Engineering & Industrial Applications (BEIAC), 2013.

IEEE Symposium on Business, Engineering and Industrial Applications (ISBEIA), 2012.

Pan-Alberta Computing Science Conference (PABCS), 2012.

Sub-Reviewer

International Conf. on Intelligent, Secure & Dependable Systems in Dist. & Cloud Environments (ISDDC), 2018.

IEEE International Conference on Data Mining (ICDM), 2012.

ACM SIGKDD Conference on Knowledge Discovery and Data Mining (KDD), 2012.

Other Volunteering

ACM SIGWEB (2011 – Present): Webmaster and Content Management System (CMS) developer.

University of Alberta International Student Services (2011): English as a Second Language (ESL) class facilitator.

University of Alberta DiscoverE Camp (2010): Mentor for grades 4-6 students on computers and society.