

Yasanka Sameera Horawalavithana

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OBJECTIVE

My goal is to become a specialized person in research & academia. To me, research is often a bridge to an ambitious goal - a bridge that needs to be crossed in steps. I tend to work on projects that try to bring cutting-edge research ideas to mainstream practice. To uplift and share my knowledge, I would like to apply for this fellowship.

EDUCATION

University of South Florida, Tampa, FL

Doctor of Philosophy, Computer Science and Engineering, Present GPA*: 4.00

University of Colombo, School of Computing, Colombo, Sri Lanka

Bachelor of Science, Computer Science, April 2015

GPA: 3.84

Umeå University, Sweden

Exchange Student, Computer Science, Fall 2013

PUBLICATIONS

Conference: Essa Alhazmi, Sameera Horawalavithana, Jeremy Blackburn, John Skvoretz and Adriana Iamnitchi 2017. An Empirical Study on Team Formation in Online Games. In Proceedings of 11th International AAAI Conference on Web and Social Media (ICWSM'17), Montreal, Canada, May 2017 (currently under review)

Workshop: Sameera Horawalavithana and D. N. Ranasinghe. 2015. An Efficient Incremental Indexing Mechanism for Extracting Top-k Representative Queries Over Continuous Data-streams. In Proceedings of the 14th International Workshop on Adaptive and Reflective Middleware (ARM 2015). ACM, New York, NY, USA, ,Article 8 , 3 pages. DOI=<http://dx.doi.org/10.1145/2834965.2834975>

Technical Report: Sameera Horawalavithana, D.N. Ranasinghe. Cloud based pub/sub model for Top-k matching over continuous data-streams **Best Undergraduate Thesis** January 2015, University of Colombo, School of Computing, Sri Lanka

Literature Review: Sameera Horawalavithana, On the Design of an Efficient Hardware Accelerator for Large Scale Graph Analytics, December 2016, University of South Florida, Tampa

Literature Review: Sameera Horawalavithana, D.N. Ranasinghe. Distributed Software Transactional Memory, January 2014, University of Colombo, School of Computing, Sri Lanka

PROJECTS

Team Dynamics in Online Games: We (Distributed System Group, USF) examine several hypotheses about team formation and team performance using a large, longitudinal dataset from team-based online gaming environment. Specifically, we are collecting and analyzing data and model team behavior to understand how teams form and the determinants of successful performance. (Dec 2016 - Present)

Mining customer profiles: General profile mining module for all customer entities that are engaged with CAKE restaurant platform. Further, the model is designed to profile and build a rich customer entity based on the common behavior across homogeneous profiles. The system is implemented on top of Spark Streaming and Kafka to provide a scalable service, and uses Elasticsearch and Spark integration to index and retrieve records efficiently. It leverages Amazon Lambda server-less architecture, and Amazon DynamoDB as the data persistent layer to explore customer insights. (January 2016 - July 2016)

Real-time ETL: A real-time data-warehouse solution is implemented on top of Apache Storm and Hadoop. Tungsten Replicator is used to synchronize binlogs with HDFS data-storage. (February 2015 - August 2015)

EC2PubSubK: Top-k publish/subscribe model: EC2PubSubK is a novel content-based Top-k publish/subscribe model which is implemented on top of AWS. In our study, we formalize a variation of continuous k-diversity problem as MAXDIVREL which maps to the independent dominating set problem in dynamic graphs, which is NP-hard. An incremental indexing mechanism is proposed for handling streaming publications that is based on Locality Sensitive Hashing (LSH) to diversify Top-k results continuously. In the implementation, we use Amazon Kinesis to distribute the stream of publications across shards and Amazon ElasticCache to serve as an in-memory operational data-store for storing subscription graphs in large scale. (March 2014 - December 2014)

GCOM: Group Communication Middleware: GCOM is a middleware for group communication in Distributed Systems. The middleware implemented an API that in turn can be used by programmers to develop applications that make use of reliable messaging. GCOM supported various types of multicast, guarantee causal message ordering and handle group membership issues. (December 2013)

EXPERIENCE

Graduate Research Assistant University of South Florida
January 2017 - Present Department: CSE
Currently working at Distributed System Group (DSG) under Dr. Adriana Iamnitchi.

Mentor (Volunteer position) Sustainable Computing Research Group
January 2015 - Present University of Colombo, Sri Lanka
Active mentor at Google Summer of Code, Google Code-in 2015 and 2016

Graduate Teaching Assistant University of South Florida
August 2016 - December 2016 Department: CSE
Courses: Data Structures, and IT Data Structures

Software Engineer Cake Labs (Pvt.) Ltd.
February 2015 - July 2016 59, Flower Rd, Colombo 07, Sri Lanka
Worked at Data and Analytic Team.

Guest Lecturer University of Colombo
July 2015, 2016 35, Reid Avenue, Colombo 07, Sri Lanka
Course: Distributed System.

Visiting Researcher University of Colombo
March 2016 - July 2016 35, Reid Avenue, Colombo 07, Sri Lanka
Active collaboration with Dr. D.N. Ranasinghe on building an efficient query platform for streaming and dynamic natural graphs.

AWARDS & HONORS

Best Undergraduate Thesis: University Gold Medal and CINTEC Award for the Best Computer Science Undergraduate Thesis/Project at year 2014, awarded at University convocation 20th July, 2015

- ACM/SIGHPC Travel Grant for Supercomputing 2016, Salt Lake City, Utah
- Achieved 3rd place at Nordic Collegiate Programming Contest 2013 (Umeå region) representing Umeå university
- 2nd Runner up at Information Security Quiz organized by SL CERT CC 2014
- Participant at IEEE Extreme international coding competition 2012 & 2013 representing University of Colombo
- Team member of the winning team at All Island Inter School Chemistry Quiz Competition 2008/09 organized by Institute of Chemistry Ceylon
- Finalist in best secretary category at Inter school Junior Entrepreneurship program organized by Young Entrepreneurs Sri Lanka (YESL) 2009

DECLARATION I hereby declare that the above written particulars are true to the best of my knowledge and belief & below referees can be contacted to get further information.

Dr. Adriana Iamnitchi, Associate Professor,
Department of Computer Science and Engineering, University of South Florida, 4202,
East Fowler Ave, Tampa, FL 33620
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Dr. D.N. Ranasinghe, Senior Lecturer Gr. I,
University of Colombo, School of Computing, 35, Reid Avenue, Colombo 7, Sri Lanka,
mail: dnr@ucsc.cmb.ac.lk