Ekansh Sharma

Contact Information

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Education

University of Toronto, Toronto, ON, Canada
Doctor of Philosophy, Computer Science, expected 2021
Adviser: Prof. Daniel Roy

University of Toronto, Toronto, ON, Canada
Master of Science, Computer Science, conferred 2018
Adviser: Prof. Daniel Roy

University of Toronto, Toronto, ON, Canada
Bachelor of Applied Science w/ Honors, Electrical Engineering, conferred 2016
Minor in Robotics and Mechatronics

In Preparation

Approximations in Probabilistic Programs with `slice-let` Construct
with Daniel Roy

Pre-prints

Veitch, V., **Sharma, E.**, Naulet, Z., and Roy, D. M. (2017). Exchangeable Modelling of Relational Data: Checking Sparsity, Data Splitting, and Sparse Exchangeable Poisson Matrix Factorization. *arXiv preprint arXiv:1712.02311.*

Naulet, Z., **Sharma, E.**, Veitch, V., and Roy, D. M. (2017). An estimator for the tail-index of graphex processes. *arXiv preprint arXiv:1712.01745.*

Workshop Publications

Erdman L., **Sharma E.**, Unternahrer E., Dass S.H., ODonnell K., Mostafavi S., Edgar R., Kobor M., Gaudreau H., Meaney M. and Goldenberg A. (2016.) Modeling trajectories of mental health: challenges and opportunities. *In NIPS Workshop Machine Learning for Health 2016.*

Refereed Conference Abstracts and Presentations

Sharma E., Roy D. (2017). Auxiliary variables in probabilistic programs. Presented at the *Probabilistic Programming Systems Workshop (PPS 2018)* Los Angeles, USA. **(talk)**

Sharma E., Roy D. (2017). Auxiliary variable sampling in probabilistic programs. Abstract #9 presented at the *2017 Statistics Graduate Student Research Day: 40 years of Statistical Sciences at the University of Toronto.* The Fields Institute, Toronto, Canada. **(poster)**

Undergraduate Research Projects

Autonomous Wing Assembly Process
Multidisciplinary Capstone Project

- Client: **Bombardier Aerospace**, North York, ON
- Adviser: Prof. Jonathan Kelly
- Designed and built a functioning prototype of an autonomous robot to join two wing halves for Global Express 7000/8000 series of business jets

Efficient implementation of a graphical model for identifying disease mechanisms in complex human diseases

- Adviser: Prof. Anna Goldenberg

- Implemented a graphical model that combines multiple sources of genetic and genomic data to identify sets of genes that could explain the presence of a disease in a larger number of patients.
- Changed the structure of graphical model that resulted in 40% run-time savings.

Extending the user-space implementation of online filesystem consistency checker using Linux KVM

- Adviser: Prof. Ashvin Goel
- Worked on RECON, an online filesystem consistency checker
- Extended the user-space implementation of RECON to use Linux KVM

Professional Experience

Altera Corp., Toronto, ON
Software Engineering Intern — *Fall 2014, Winter 2015*
Detailed Placement Team

- Modeled bidirectional long wire congestion on the chip to get better wire use estimate during placement
- Parallelized code segments in *Versatile Place and Route* to improve compile time

Microsoft Corp., Redmond, WA
Software Development Engineering Intern — *Summer 2014*
Azure Redis Cache Team

- Developed Redis output-cache provider feature for ASP.NET developers
- Developed a command line prompt to access Redis Cache on Azure Portal

Awards and Honors

Department of Computer Science 50th Anniversary Graduate Scholarship *2017*
University of Toronto Excellence Award *2013, 2015*
Dean's Honors List *2011 - 2016*

Teaching

Teaching Assistant: Enriched Theory of Computation (CSC240) *Winter 2018*
Teaching Assistant: Theory of Computation (CSC236) *Winter 2017, Fall 2016*

Relevant Coursework

Monte Carlo Methods (STA3431), Computability and Logic (CSC2404), Compilers and Interpreters(CSC2107), Computational Neuroscience(CSC2546), Introduction to Machine Learning (CSC411), Inference Algorithms (ECE521), Random Processes(ECE537), Neural Networks(CSC321), Robot Modeling and Control (ECE470).