Seong-Hwan Jun
Nationality: Canadian
Email: seong.jun@stat.ubc.ca

CONTACT INFORMATION

Department of Statistics
University of British Columbia
3182 Earth Sciences Building
2207 Main Mall
Vancouver, BC, Canada, V6T 1Z4

EDUCATION

University of British Columbia
PhD in Statistics, 2013 - Aug 2017 (Expected)
– Advisors: Prof. Alexandre Bouchard-Côté and Prof. Jim Zidek

MSc in Statistics, 2011 - 2013
– Thesis: Entangled Monte Carlo
– Advisor: Prof. Alexandre Bouchard-Côté

University of Waterloo
– *Bachelor of Mathematics*, Honours, Co-op, 2004 - 2009
– Major: Computer Science

RESEARCH INTERESTS

- Sequential Monte Carlo methods
- Latent variable models
- Bayesian inference and Bayesian nonparametric methods
- Distributed algorithms for large scale inference problems
- Probabilistic programming
- Sports analytics

MANUSCRIPT IN PREPARATION

- **S-H. Jun**, A. Bouchard-Côté, S. Wong, J. Zidek, and Z. Pirouz. Local Multinomial Model for Non-Regular Hypergraph Matching, with Application to Computational Forestry.

- Y. Liu, D. Dinsdale, **S-H. Jun**, C. Briercliffe, and J. Bone.Statistical Learning of Basketball Strategy: The Potential Field Approach.

REFEREED PUBLICATION

- **S-H. Jun**, A. Bouchard-Côté, S. Wong, and J. Zidek. Sequential Graph Matching with Sequential Monte Carlo. International Conference on Artificial Intelligence and Statistics (AISTATS). Accepted.

- **S-H. Jun** and A. Bouchard-Côté. (2014). Memory (and Time) Efficient Sequential Monte Carlo. International Conference in Machine Learning (ICML). 31: 514-522.
  Acceptance rate: 310/1238.

- **S-H. Jun**, L. Wang and A. Bouchard-Côté. (2012). Entangled Monte Carlo. Advances in Neural Information Processing Systems (NIPS). 25: 2735-2743. Acceptance rate: 370/1467. Spotlight talk: 72/1467.

PRESENTATIONS AND TALKS

- Statistical Learning of Basketball Strategy: The Potential Fields Approach. (2016). *The Cascadia Symposium on Statistics and Sports.* Joint work with Y. Liu, D. Dinsdale, C. Briercliffe, and J. Bone. Poster presentation.
- Memory (and Time) Efficient Sequential Monte Carlo. (2014). *International Conference on Machine Learning (ICML). 31.* Oral and poster presentation.
- Exploring Spatial and Temporal Heterogeneity of Environmental Noise in Toronto. (2013). *Winner of the case study competition at 41st annual meeting of the Statistical Society of Canada.* Joint work with C. Casquilho, N. Fishbane, Y. Nie. Oral and poster presentation.
- Using a Stochastic Map View of Sequential Monte Carlo for Memory and Network Efficiency. (2013). *Randomized Algorithm Workshop at Advances in Neural Information Processing Systems (NIPS). 26.* Joint work with A. Bouchard-Côté. Poster presentation.
- Importance sampling, sequential importance sampling, and bootstrap particle filter. (2012). *The semi-annual UBC-SFU joint seminar.* Oral presentation.

COMPUTER SKILLS

Programming Languages*:* Java and R (expert), Python (intermediate), C/C++ and MATLAB (working knowledge)
Software*:* ImageJ, OpenCV-Python, LaTeX, RStudio, Jupyter Notebook, Eclipse
Computing Platforms*:* Mac OS X, Ubuntu, Amazon Web Services (EC2, elastic map reduce, S3)

ACADEMIC EXPERIENCES

Research Assistant Jan 2017 - Current
Project: Conditional streaming SMC. Working on the extension of streaming SMC for PMCMC framework.
Supervisor: Prof. Alexandre Bouchard-Côté

Research Assistant May 2014 - Dec 2016
Project: Autonomous strength grade system for lumber. Image processing and graph matching for reconstruction of convex body.
Supervisors: Prof. Jim Zidek and Prof. Alexandre Bouchard-Côté

Research Assistant Sep 2013 - Apr 2014
Project: Streaming SMC. Scalable SMC method for memory intensive latent variable problems.
Supervisor: Prof. Alexandre Bouchard-Côté

Research Assistant May 2011 - Aug 2011; May 2012 - Aug 2012
Project: Entangled Monte Carlo. Minimizing transmission of particles over the network using the idea of reconstruction of the particle from the particle genealogy.
Supervisor: Prof. Alexandre Bouchard-Côté

TEACHING EXPERIENCES

UBC Master of Data Science Academic Assistant Aug 2016 - Dec 2016
Developed course contents for the newly launched Master of data science program:

- Web and cloud computing: Analyzing Google N-grams using Map-Reduce on Amazon Web Services (AWS)

- Supervised learning II: Training neural network with Tensorflow using GPU instances on AWS
- Experimentation and causal inference: Designing an A/B testing using R Shiny

Teaching Assistant Jul 2012 - Dec 2012
STAT 447/547B: Methods for Statistical Learning, UBC
- Assisted in developing course contents
- Topics: boosting, generalized additive models, splines, regression trees and random forest, LASSO, K-NN classifier

Teaching Assistant Jan 2012 - Apr 2012
STAT 441: Multivariate Statistics, UBC
- Led weekly lab discussions

INDUSTRY EXPERIENCES

Software Developer and Co-founder Jan 2009 - May 2011
Leadconstructor Inc, Toronto, ON
- Web software development with ASP .NET and C#
- Stand-alone software development with Java

Software Engineering Intern Jan 2008 - Apr 2008
Qualcomm, San Diego, CA
- Embedded software development (CDMA chips) and debugging with C

Software Development Intern Apr 2007 - Aug 2007
Endeca Technologies, Cambridge, MA
- Web application design – UX and HCI
- Web application development using Java web technologies

Software Developer Co-op Jan 2006 - Jun 2006
Cedara Software, Mississauga, ON
- Automatic test suite development to validate new software features
- Debugging and feature development of softwares written in Java

Software Tester Co-op Sep 2004 - Dec 2004; May 2005 - Aug 2005
Ontario Ministry of Health, Toronto, ON
- Automated test suite development for a stand-alone Java application
- Application feature development in Java

SERVICES

Reviewer for ICML 2017

Manager of the student run statistical consulting services
Statistics Department, UBC, Vancouver, BC

- Served in the committee for restructuring of the student run consulting services
- Developed operating guidelines for the consulting services
- Recruited student consultants and managers

Graduate student seminar organizer Aug 2014 - Apr 2016
Statistics Department, UBC, Vancouver, BC

- Invited speakers for the weekly graduate student seminar.

- Organized student run lecture series on various topics: parallel computing in R, statistical analysis of network data, and sports analytics.

AWARDS

2014	ICML Travel Award
2013-17	Faculty of Science Graduate Award (Ph.D)
2013	SSC Case Study Competition Winner
2012	NIPS Travel Award
2011-13	Faculty of Science Graduate Award (MSc.)
2011	NSERC Undergraduate Student Research Award