Guiliang Liu

PHD CANDIDATE · COMPUTER SCIENCE

School of Computing Science, Simon Fraser University, 888 University Drive, Burnaby, BC

| ✉ gla68@sfu.ca | ⌂ Guiliang | 🔗 guiliang-liu-06b6b5a3

Education

Simon Fraser University (SFU)   *Burnaby, Canada*
PHD CANDIDATE IN COMPUTER SCIENCE   *Sept. 2016 - PRESENT*
- **Supervisor:** Oliver Schulte, **GPA**: 3.92/4.3
- **Research Interests:**
  - Deep Reinforcement Learning and its Interpretability.
  - Spatio-Temporal Data Mining.
  - Statistical Inference.
- **Master Program Skipped:** Directly recruited as a PhD student after bachelor school.

South China University of Technology (SCUT)   *Guangzhou, China*
BACHELOR OF ENGINEERING   *Sept. 2012 - July 2016*
- **Major:** Computer Science and Technology, **GPA:** 3.72/4, **Rank:** 3/20
- Enrolled in the Taught-in-English elite student program.

Publications

CONFERENCE PAPERS

- **Guiliang Liu**, Oliver Schulte, Mike Rudd, Jack Davids, Pascal Poupart . "Learning Deep Hockey Player Representations with A Variational Hierarchical Encoder". Under review for IJCAI 2020.

- **Guiliang Liu**, Xu Li, Jiakang Wang, Mingming Sun, Ping Li. "Extracting Knowledge from Web Text with Monte Carlo Tree Search". The World Wide Web Conference (WWW) 2020.

- **Guiliang Liu**, Xu Li, Mingming Sun, Ping Li. "An Advantage Actor-Critic Algorithm with Confidence Exploration for Open Information Extraction". Proceedings of the SIAM International Conference on Data Mining (SDM) 2020.

- **Guiliang Liu**, Oliver Schulte. "Deep Reinforcement Learning in Ice Hockey for Context-Aware Player Evaluation". Proceedings the 27th International Joint Conference on Artificial Intelligence (IJCAI) 2018.

- **Guiliang Liu**, Oliver Schulte, Wang Zhu, Qingcan Li. "Toward Interpretable Deep Reinforcement Learning with Linear Model U-Trees". The European Conference on Machine Learning and Principles and Practice of Knowledge Discovery in Databases (ECML-PKDD) 2018.

JOURNAL PAPERS

- **Guiliang Liu**, Yudong Luo, Oliver Schulte, Tarak Kharrat. "Deep soccer analytics: Learning an action-value function for evaluating soccer players". Under second round review of Data Mining and Knowledge Discovery (DMKD).

WORKSHOP PAPERS

- **Guiliang Liu**, Oliver Schulte. "Learning Contextualized Player Representations with A Variational Hierarchical Encoder". AI in Team sport (AIT) workshop, 2020, in the AAAI conference on artificial intelligence.

- **Guiliang Liu**, Wang Zhu, Oliver Schulte. "Interpreting Deep Sports Analytics: Valuing Actions and Players in the NHL". The Machine Learning and Data Mining for Sports Analytics workshop (MLSA) workshop, 2018, in the The European Conference on Machine Learning and Principles and Practice of Knowledge Discovery in Databases (ECML-PKDD).

Research Experience

SLiQ Lab, Sportlogiq
RESEARCH INTERN

Vancouver, Canada
Feb. 2020 - Present

- **Supervisor:** Pro.Oliver Schulte
- **Research Topics**: Data mining on temporal-spatial sports data.
- **Brief Intro**: (1) Evaluate in-game actions of player with Temporal Difference method.
  (2) Model player information with a Bayesian hierarchical model and Variational Inference.

Cognitive Computing Lab, Baidu Research
RESEARCH INTERN

Beijing, China
Aug. 2018 - Feb. 2019

- **Supervisor:** Pro.Ping Li
- **Research Topics**: Open Information Extraction and Reinforcement Learning.
- **Brief Intro**: Extract information from Web text with Actor-Critic algorithm and Monte-Carlo Tree Search.

Structural Machine Learning Lab, SFU
RESEARCH ASSISTANT

Vancouver, Canada
Sept. 2016 - Present

- **Supervisor:** Pro.Oliver Schulte
- **Research Topics**: Deep Reinforcement Learning and its Interpretability.
- **Brief Intro**: (1) Interpret Deep Reinforcement Learning with Linear Model Tree Search.
  (2) Evaluate NHL Player performance with Deep Q-learning.

Scholarships

2020	**School Scholarship**, Kaltenegger Family Grad School.	*Canada*
2019	**School Scholarship**, Helmut & Hugo Eppich Family Scholarships for Grad School.	*Canada*
2018	**School Scholarship**, HBackwater/Jost Scholarships for Grad School.	*Canada*
201(6-9)	**School Scholarships**, Graduate Fellowship From Simon Fraser University (SFU).	*Canada*
2015	**National Scholarship**, Outstanding student, *Ministry of Education of China.*	*China*
2014(15)	**Enterprise Scholarships**, Hong Ping Chang Qing Technological Innovation Scholarship.	*China*
2015	**Enterprise Scholarships**, Tencent Innovation Scholarship.	*China*
2015	**School Scholarships**, Merit Student Honor, South China University of Technology (SCUT)	*China*