

# Sandesh Adhikary

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## Education

- 2019–Present **PhD Candidate**, *Computer Science and Eng., University of Washington* (GPA: 3.89).  
2017–2019 **PhD Student**, *Computational Science and Eng., Georgia Tech* (GPA: 4.0).  
2011–2015 **Bachelors of Arts**, *Physics, Reed College* (GPA: 3.65),  
**Honors: Phi Beta Kappa, Academic Commendation (2012, 2013, 2015)** .

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## Research

### 2021–Present **Policy Composition in Multi-Objective Decision Making**

Developing a structured class of policy composition strategies to interpolate between reinforcement learning policies learned for multiple, potentially conflicting objectives.

*Papers* **Adhikary, S.** and Boots, B., (2022). Modular Policy Composition with Policy Centroids. Multidisciplinary Conference on Reinforcement Learning and Decision Making (RLDM)

### 2020–Present **Geometry-Aware Sampling with Kernel Herding**

Extended the kernel herding algorithm to the task of drawing samples from probability distributions over data-spaces corresponding to various structured Riemannian manifolds routinely encountered in robotics.

*Papers* **Adhikary, S.**, Thompson, J., and Boots, B., (2021). [Sampling over Riemannian Manifolds with Kernel Herding](#). Robotics: Science and Systems (R:SS) Workshop on Geometry and Topology in Robotics. (Full paper to appear in ICRA 2022)  
**Honors: Awarded Best Workshop Paper**

### 2019–2021 **Quantum-Inspired Probabilistic Modeling**

Established equivalencies between probabilistic models from quantum tensor networks, stochastic processes, and weighted automata. Developed an approach to learning hidden quantum Markov models using their parameterization on the Stiefel manifold.

*Papers* Srinivasan, S., **Adhikary, S.**, Miller, J., Pokharel, B., Gordon, G. & Boots, B. (2021), [Towards a Trace-Preserving Tensor Network Representation of Quantum Channels](#), Second Workshop on Quantum Tensor Networks (NeurIPS)  
**Adhikary, S.\***, Srinivasan S. \*, Miller J., Rabusseau G., & Boots B. (2021) [Quantum Tensor Networks, Stochastic Processes, & Weighted Automata](#). International Conference on Artificial Intelligence and Statistics (AISTATS).  
**Adhikary, S.\***, Srinivasan, S. \*, Gordon, G. & Boots, B. (2020) [Expressiveness and Learning of Hidden Quantum Markov Models](#). International Conference on Artificial Intelligence and Statistics (AISTATS).

### 2017–2019 **Predicting Post-transplant Outcomes in Renal Transplant Patients**

Collaborated with clinical experts to develop machine learning models predicting transplant failures, readmissions, and mortality in renal transplant patients.

*Papers* Hogan, J., Arenson, M. D., **Adhikary, S.**, Li, K., Zhang, X., Zhang, R., Valdez, J. N., Lynch, R. J., Sun, J., Adams, A. B., & Patzer, R. E. (2019). [Assessing Predictors of Early and Late Hospital Readmission After Kidney Transplantation](#). Transplantation Direct 5(8)

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## Teaching

- Oct 2020–Dec 2020 **Teaching Assistant** *CSE599: Reinforcement Learning*, University of Washington  
Dec 2018–May 2019 **Teaching Assistant** *CS4002: Robots and Society*, Georgia Tech.  
Aug 2017–Dec 2017 **Teaching Assistant** *CS4001: Computing, Society, and Ethics*, Georgia Tech.