Aparajithan Venkateswaran

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Education

University of Washington, Department of Statistics   2024

Ph.D. in Statistics. Co-advisors: Tyler H. McCormick & Emilija Perković.
Dissertation: "Problems in Identification and Estimation: Algorithms for Pathogen, Ancestral, and Rashomon Analysis"

University of Washington, Department of Statistics   2022

M.S. in Statistics.

University of Colorado Boulder, College of Engineering   2020

B.S. in Applied Mathematics, *summa cum laude* with Honors.
B.S. in Computer Science, *summa cum laude* with Honors. Advisor: Daniel B. Larremore.
Senior Thesis: "Understanding SpringRank through Random Utility Models, Identifiability and Online Updates"

Experience

Microsoft

Data Scientist   2024-present

Data Science Intern   2022-2023

Summer 2023: Xbox Player Services Team.
Summer 2022: Xbox Player Services Team.

Software Engineering Intern   2019-2021

Summer 2021: Mixed Reality Object Understanding Team.
Summer 2020: Mixed Reality Cloud SDK Team.
Summer 2019: Edge Experimentation Team.

Research

University of Washington   2021-2024

Causal Discovery: Adding expert knowledge to causal graphs.
Rashomon Effect: Enumerating near-optimal models to robustly estimate heterogeneity.
Multi-armed Bandits: Mortal multi-armed bandits to efficiently perform contact tracing.

University of Colorado Boulder   2017-2020

> COVID-19 Response: OSS to monitor anonymized social densities on campus.
> Complex Networks: Rank embeddings, identifiability of node covariates, online ranking.
> Resume Parsing: Machine learning and stochastic models to segment and parse curricula vitae.
> Feature Tracking: Optical navigation using deep learning.

Teaching

University of Washington   2020-2023
Teaching Assistant

> Winter 2023: Stochastic Modeling II (STAT 517).
> Winter 2022: Statistics for Social Sciences (STAT 221).
> Autumn 2021: Statistical Inference I (STAT 512).
> Spring 2021: Introduction to Statistical Learning (STAT 435).
> Winter 2021: Elements of Statistical Methods (STAT 311).
> Autumn 2020: Statistical Reasoning (STAT 220).

University of Colorado Boulder   2018-2020
Teaching Assistant

> Spring 2020: Chaotic Dynamics (CSCI 4446/5446).
> Spring 2018: Discrete Structures (CSCI 2824).

Talks and Presentations

"Robustly estimating heterogeneity in factorial data using Rashomon Partitions"   Aug 2024
Joint Statistical Meetings [Portland, Oregon]

"Towards complete causal explanation with expert knowledge"   May 2024
American Causal Inference Conference [Seattle, Washington]

"Feasible contact tracing" (Invited)   Mar 2024
Epidemiology and Biostatistics Seminar [University of Illinois Chicago]

"Rashomon pooling sets for heterogeneity"   Jan 2024
Statistics Winter Workshop on Casual Inference and its Applications [University of Florida]

"Leveraging heterogeneity in infectivity to improve contact tracing"   Aug 2022
Joint Statistical Meetings [Washington D.C.]

"Efficient contact tracing"   Nov 2021
Data Science Methods for Policy Evaluation [Johns Hopkins University]

Peer-Reviewed Publications

1. T. Tran, J. M. Steiner, **A. Venkateswaran**,[1] and J. Buber, "Peak oxygen consumption by smartwatches compared with cardiopulmonary exercise test in complex congenital heart disease", *Heart* p. heartjnl-2023-322989, (2023). doi: 10.1136/heartjnl-2023-322989.

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[1] Consulting statistician

Other Publications

2. **A. Venkateswaran**, "Understanding SpringRank through Random Utility Models, Identifiability and Online Updates", *University of Colorado Boulder* (2020).
3. **A. Venkateswaran**, B. Palmer, and J. Kailey-Steiner, "The Value of Identity: Measure the Cost of Privacy", *Colorado Journal of Applied Mathematics* pp. 1-22, (2018).

Preprints and Working Manuscripts

4. **A. Venkateswaran**, E. Perković, "Towards Complete Causal Explanation with Expert Knowledge", https://arxiv.org/abs/2407.07338 (2024).
5. **A. Venkateswaran**, A. Sankar, A. G. Chandrasekhar, T. H. McCormick, "Robustly estimating heterogeneity in factorial data using Rashomon Partitions", https://arxiv.org/abs/2404.02141 (2024).
6. **A. Venkateswaran**, J. Das, T. H. McCormick, "Feasible contact tracing", https://arxiv.org/abs/2312.05718 (2023).

Awards

Outstanding Undergraduate for Academic Achievement [CU Boulder]	2020
Chancellor's Recognition Award [CU Boulder]	2020
Active Learning Award [CU Boulder]	2020
Computer Science Discovery Learning and Service Learning Award [CU Boulder]	2020
Colorado Mathematics Award [State of Colorado]	2019
INFORMS Award, Outstanding Winner [Mathematical Contest in Modeling]	2019
Wozniak Scholarship [CU Boulder]	2018, 2019
Meritorious Winner [Mathematical Contest in Modeling]	2018
O'Kelly Scholarship [CU Boulder]	2017

Service

Statistics Directed Reading Program [UW]	2021-2024
Pre-Application Review Service [UW]	2021-2023
Graduate Student Representative [UW]	2022-2023
Statistics Drop-in Tutor [UW]	2020-2021
HackCU [CU Boulder]	2016-2020
GitHub Campus Expert [CU Boulder]	2017-2020