

# 2024 SDSU Data Science Symposium Schedule

Monday, February 5, 2024				
Time	Pasque Room (255)	Dakota Room A/C (250)	Pheasant Room A/C (253)	Herold Crest 253 C
12:30-5:00 p.m.	Check-in/Registration   Prairie Lounge			
1:00-5:00 p.m.	<b>WORKSHOP 1</b> <i>Data Science for Actuaries Using R</i> Tatjana Milijakovic	<b>WORKSHOP 2</b> <i>Docker for Data Science</i> Rami Krispin	<b>WORKSHOP 3</b> <i>Coding with ChatGPT</i> Xijin Ge	<b>WORKSHOP 4</b> <i>Block Chain Boot Camp</i> Timothy Li
6:00-6:30 p.m.	Banquet   Oscar Larson Performing Arts Center			
6:30-8:00 p.m.	Social Time (cash bar)			
7:15-7:30 p.m.	Dinner			
7:30-8:30 p.m.	Welcome, Kurt Cogswell, Head, Department of Mathematics and Statistics Keynote: <i>Evolution of FinTech: A Personal Journey</i> , Timothy Li, Tech Entrepreneur, FinTech			
Tuesday, February 6, 2024				
Time	Herold Crest (253C)	Dakota Room A/C (250)	Pasque Room (255)	
7:30 a.m.-noon	Check-in/Luggage Check   Volstorff Lounge			
7:45-8:15 a.m.	Breakfast   Volstorff B			
8:30-8:45 a.m.	Opening Session   <i>Welcome and Introduction</i> , Dr. Sanjeev Kumar, Dean, Jerome J. Lohr College of Engineering   Volstorff B			
8:45-9:45 a.m.	Keynote: <i>The Role of the Data Scientist in the Era of LLM and GenAI</i> , Rami Krispin   Volstorff B			
9:50-10:50 a.m.	<b>Session 1</b> Chair: Thomas Brandenburger <b>Fighting the Good Fraud Fight</b> Adam J. Elliott, Kevari <b>Commercial Finance Account Management Scorecards — Risk &amp; Propensity</b> Sebastian Sowada & Ed Krueger, Channel Partners	<b>Session 2   Health Applications</b> Chair: Xijin Ge <b>Transforming Maternal Care: Building a Comprehensive Database for Better Outcomes in South Dakota</b> Christine Wey Hockett, Avera Research Institute <b>Development of a Machine Learning and Computational Method to Identify Geographic and Racial Disparities in End-stage Kidney Disease</b> Brandon Varilek, South Dakota State University	<b>Session 3   Mathematical Machine Learning</b> Chair: Michael Puthawala <b>Characterizing Rational Transplant Program Response to Outcome-based Regulation</b> Saumya Sinha, University of Minnesota <b>Into the Cat-VRS: Cracking a Clinical Conundrum Before It's Too Late</b> Daniel Puthawala, Wagner Lab, Nationwide Childrens Hospital <b>Deep Learning Strategy for Solving Physics-based Bayesian Inference Problems</b> Deep Ray, University of Maryland	
10:50-11:00 a.m.	Networking Break   Exhibitors   Volstorff A			
11:00 a.m.-noon	<b>Session 4   Finance</b> Chair: Thomas Brandenburger <b>Pprofet – A Library for Fst/Stable Credit Scorecards</b> Krystal Wang, Channel Partners Thomas Brandenburger, South Dakota State University	<b>Session 5   Machine Learning Applications in Finance</b> Chair: Gerald Wang <b>Unleashing the Power of ChatGPT in Finance Research: Opportunities and Challenges</b> Zifeng Feng, University of Texas at El Paso <b>An Empirical Study of One-Step Ahead Stock Price Prediction Using Deep Learning Model and High Dimensional Method</b> Feiyang Xu, South Dakota State University <b>Machine Learning for Stock Return Prediction: Transformers or Simple Neural Networks</b> Junze Sun and Zhiguang Wang, South Dakota State University	<b>Session 6   Models for Unsupervised Learning</b> Chair: Yana Melnykov <b>The Size-biased Lognormal Mixture with the Entropy Regularized Algorithm</b> Tatjana Milijakovic, Miami University <b>Model-based Clustering Analysis of the Spatial-Temporal and Intensity Patterns of Tornadoes</b> Rong Zheng, Western Illinois University <b>On Contaminated Transformation Mixture Models</b> Yana Melnykov, University of Alabama	
noon-1:00 p.m.	Lunch   Invited Speaker: <i>Pathways to Decarbonization</i> , Brian Fladger, MAN Energy Solutions   Volstorff B			
1:00-2:00 p.m.	Poster Session   Student Poster Competition   Volstorff A			
1:00-2:30 p.m.	Job Fair/Recruiting   Exhibitors   Volstorff B			
2:30-3:30 p.m.	<b>Session 7   Student Speed Presentations</b> Chair: Prince Agyapong <b>Hierarchical Clustering of Small Arms Propellants with Pseudo-Metrics</b> Janean Hanka, South Dakota State University <b>Studying Algorithmic Bias in Forensic Source Identification Problems</b> Isaac Gbene, South Dakota State University <b>Clustering of Synthetic Opioid Death Rates and Associated Factors in the U.S.</b> Jason Hasse, South Dakota State University <b>A Local False Discovery Rate based Assessment of Forensic and Biometric Matching System Capacity</b> Clarissa Giefer, South Dakota State University	<b>Session 8   Applications of Machine Learning</b> Chair: Nathan Meyer <b>Robust CNN-based Automatic Modulation Classification</b> Mark Arinaitwe, North Dakota State University <b>Machine Learning based Behavior of Non-OPEC Global Supply in Crude Oil Price Determination</b> Mofe Jeje, North Dakota State University <b>Clustering Singular and Non-Singular Covariance Matrices for Classification.</b> Andrew Simpson, South Dakota State University	<b>Session 9   Metric and Manifold Learning</b> Chair: Christopher Saunders <b>Iterative Estimation of Coefficients for Generalized Linear Models on Pairwise Scores</b> Cami Fuglsby, Augustana University <b>Improved Geolocation of Satellite Measurements Using Bayesian Hierarchical Models</b> Paul May, South Dakota School of Mines & Technology <b>The Embedding Gap: When Are Manifold Close?</b> Michael Puthawala, South Dakota State University	
3:30-4:15 p.m.	Networking Break   Exhibitors   SDSU Ice Cream, Volstorff A			
4:15-4:30 p.m.	Closing Session   Poster Winners Announced, Thomas Brandenburger   Volstorff B			

## Poster Presentations

**Prince Agyapong**, Meta-analysis for Studying Racial Disparities in All-Cause Mortality for Persons with End-Stage Kidney Disease

**Sayed Asaduzzaman**, Multimode Point Spectroscopy for food authentication

**Dylan Borchert**, Probabilistic foundations for the use of the logistic regression Bayes Factor in Forensic Source Identification

**Eleanor Cain**, Principal Component Analysis with Application to Credit Card Data

**Isaac Gbene**, Studying Algorithmic Bias in Forensic Source Identification Problems

**Clarissa Giefer**, A Local False Discovery Rate Based Assessment of Forensic and Biometric Matching System Capacity

**Janean Hanka**, Hierarchical Clustering of Small Arms Propellants with Pseudo-Metrics

**Jason Hasse**, Clustering of Synthetic Opioid Death Rates and Associated Factors in the U.S.

**Benjamin Honner**, Deep Neural Network for Survival Analysis of End-Stage Kidney Disease

**Nathan Meyer**, Proportional Hazards Mixture Cure Models for End Stage Kidney Disease

**Kayanna Morgan**, ML Methods Used in the Player Ranking System for Team Sports

**Shree Krishna Nyaupane**, Survival Analysis of Tree Species: Investigating Mycorrhizal Types, Soil Characteristics, and Environmental Factors.

**Hasin Rehana**, Leveraging Large Language Models for Extracting Protein-Protein Interactions from Biomedical Corpora

**Mary Row**, Predicting Crop Yield Using Remote Sensing Data

**Annika Spors**, Spatio-Temporal Change of Support Applied to South Dakota Area Deprivation Index Rankings

**FNU Tabish**, Buckling Behavior of Thin Wall Stiffened Cylindrical Shells Through ML Techniques

**Xeng Yang**, Diabetes Health Indicator Using Machine Learning Techniques