CDAR
Consortium for Data Analytics in Risk
2016 SYMPOSIUM
CDAR: Who we are...
CDAR Mission

Provide an interdisciplinary platform to explore theoretical, applied and engineering approaches for applying data science to risk measurement and management problems.
CDAR FORMATION
Established as a new research center led by SSGX, UC Berkeley, and Stanford Univ.

2015 SYMPOSIUM
Explored systemic and mortgage risks along with decision problems in adversarial environment using modeling, networks, deep learning data science

FALL SEMINARS
Weekly discussions led by industry experts at UC Berkeley

2016 SYMPOSIUM
Explore use of data science driving changes in financial markets and in developing better risk analytics

SPRING SEMINARS
Weekly discussions led by industry experts at UC Berkeley

FALL SEMINARS
Weekly discussions led by industry experts at UC Berkeley
Members
Members

State Street Corporation
SSGX, GX Labs

Center For Risk Management Research
Members
Members

Stanford University
Center for Financial and Risk Analytics

BERKELEY Institute for Data Science

BERKELEY Institute for Data Science

State Street

Center for Risk Management Research
Members

Korean National Pension Service

STATE STREET

CENTER FOR RISK MANAGEMENT RESEARCH

BERKELEY Institute for Data Science
CDAR: What we’re working on...
A year ago...

Consortium for Data Analytics in Risk (CDAR)
Bringing academia and industry together in data science

Home

CDAR supports research and innovation in the data science field to help manage and mitigate market risk. CDAR is supported by State Street Bank and Trust as well as the Economics and Industry Businesses of the University of Wisconsin and technology companies large and small.

© 2016 Consortium for Data Analytics in Risk (CDAR) - Website under construction

Coming Soon
Drawdown Risk

Leverage and Risk Parity

Risk parity strategies are exposed to variable leverage and rising interest rates.

Note: Correlation was computed from monthly data with the use of a trailing 36-month window.
The model for repurchase agreement market is not always stable and market stability is determined by relationships between the system leverage A/C, repo rate, haircut and the network.
Daily financing rates implied by equity futures contracts are estimated and averaged within four distinct regimes from 1996 to 2013.
Using Convex Identification to Identify Financial Risk Factors

Low-rank sparse matrix decompositions identify narrow factors that may be missed by Principal Component Analysis.
Low-rank sparse matrix decompositions allow the detection of unusual trades.
The deep learning (neural network) model takes into account nonlinear effects of prepayment for predicting mortgage prepayments at a portfolio level, out of sample, versus logistic regression model.
PCA with Model Misspecification

Compare VaR predictions derived from past empirical distribution to those from Gaussian model. Illustration of simulated returns with Variable Volatility and Negative Skew, one-day 3% VaR predictions.
A Glimpse at Today’s Program
Incorporation of Text News Analytics in Risk Assessment

Dan diBartolomeo
President, Northfield

News, the information set that bridges the past and the future, can be explicitly incorporated in portfolio risk forecasts.
Exploiting Myopic Prediction Models in Reinforcement Learning

Craig Boutilier
Principal Scientist, Google

“Myopic” reinforcement learning methods for predicting short-term behavior are used to optimize over longer horizons.
What Can Statistical Methods do (or not do) for Finance?

Are there limitations to what statistical methods can tell us about financial markets?

Alex Shkolnik
Postdoctoral Scholar, UC Berkeley

Alex Papanicolaou
Postdoctoral fellow, CDAR
Computational Thinking, Inferential Thinking and Data Science

Mike Jordan
Professor, UC Berkeley

The growing size and scope of scientific data sets is leading to novel perspectives on data analysis that blend inferential and computational sciences.
ESG Discussion

Jeff Bohn
Chief Science Officer, State Street Global Exchange

Liz Michaels
Head of SRI, Aperio Group LLC

Lloyd Kurtz
Head of Social Impact Investing, Wells Fargo Private Bank

Ronald C. Cohen
Director, Berkeley Atmospheric Science Center