University of Illinois
Deloitte Foundation
Center for Business Analytics

January 12, 2018

Agenda

- Introductions
- Review Center Charge
- What are we doing?
- What might we do?

Perspectives

Deloitte on disruption

Changing course in a disruptive world

Remember several years ago, when every street corner and strip mall seemed to have a big blue Blockbuster? In 2004, Blockbuster was the dominant, unassailable leader in home video rental, with 9,000 stores and 60,000 employees. Who could have predicted that just six years later, the industry giant that took out nearly all the neighborhood mom-and-pop rental shops would itself be taken out?

Disruption: A permanent fact of life

In hindsight, Blockbuster wasn't taken down by a single competitor, but by its own failure to respond when strategic risks threatened the underpinnings of its

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Disruption: A permanent fact of life

Living in a "VUCA" world

Risk is not a game

We're only human

What smart companies will do

ft.com

Disruption & Technology

Special Report

Disruption & Technology

There is no area of business, society or life which technology is not upending. This report looks at the fullest range, from gold mining in Russia to gay bars in London


Disconnect
United States of America
State Boundary
Road
River
National Capital
State Capital
City or Town
0 300 KM
0 300 Miles
© 2007 Geology.com
0 500 KM
0 500 Miles
0 100 KM
0 100 Miles
Pacific Ocean
Atlantic Ocean
Gulf of Mexico
CANADA
MEXICO
U.S.A.
Lake Winnipeg
Lake Superior
Lake Michigan
Lake Huron
Lake Erie
Lake Ontario
Mississippi
Missouri
Red
Rio Grande
Pecos
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Colorado
Canadian
Washington, D.C.
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Boston
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Columbus
Cincinnati
Louisville
Frankfort
Charleston
Raleigh
Columbia
Montgomery
Jackson
Baton Rouge
New Orleans
Austin
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Albuquerque
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Salt Lake City
Boise
Helena
Salem
Olympia
Victoria
Vancouver
Calgary
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Regina
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Chihuahua
Monterrey
Saltillo
Laredo
Corpus Christi
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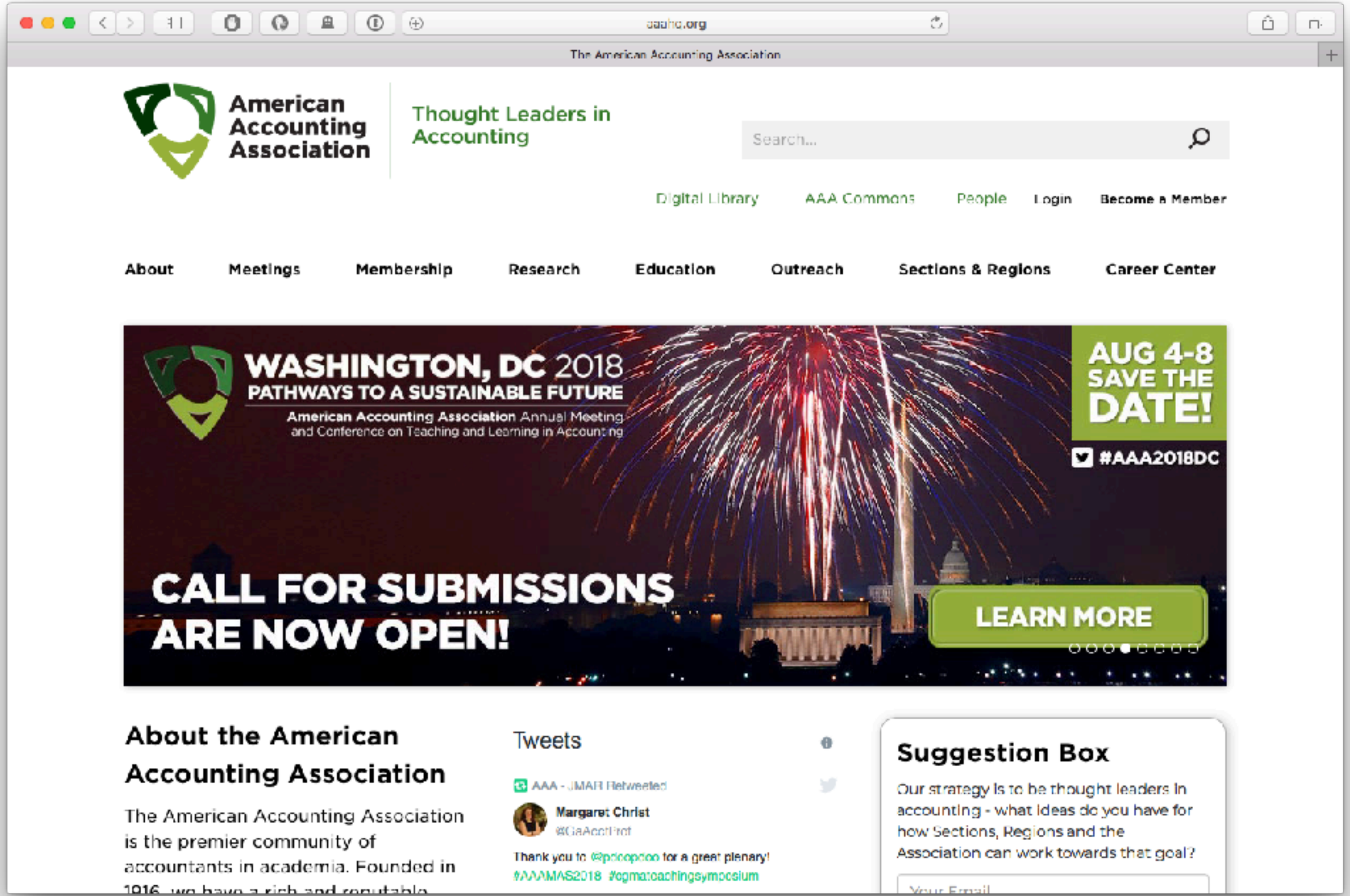
THE BAHAMAS

1815 Miles

Academic Worldview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PATHWAYS TO A SUSTAINABLE FUTURE
American Accounting Association Annual Meeting and Conference on Teaching and Learning in Accounting
AUG 4-8
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The American Accounting Association is the premier community of accountants in academia. Founded in
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Margaret Christ
Thank you to @pdcopdcop for a great plenary!
#AAAMAS2018 #cgmatcoachingsymposium
Suggestion Box
Our strategy is to be thought leaders in accounting - what ideas do you have for how Sections, Regions and the Association can work towards that goal?

VUCA Worldview

VUCA Worldview

Volatile

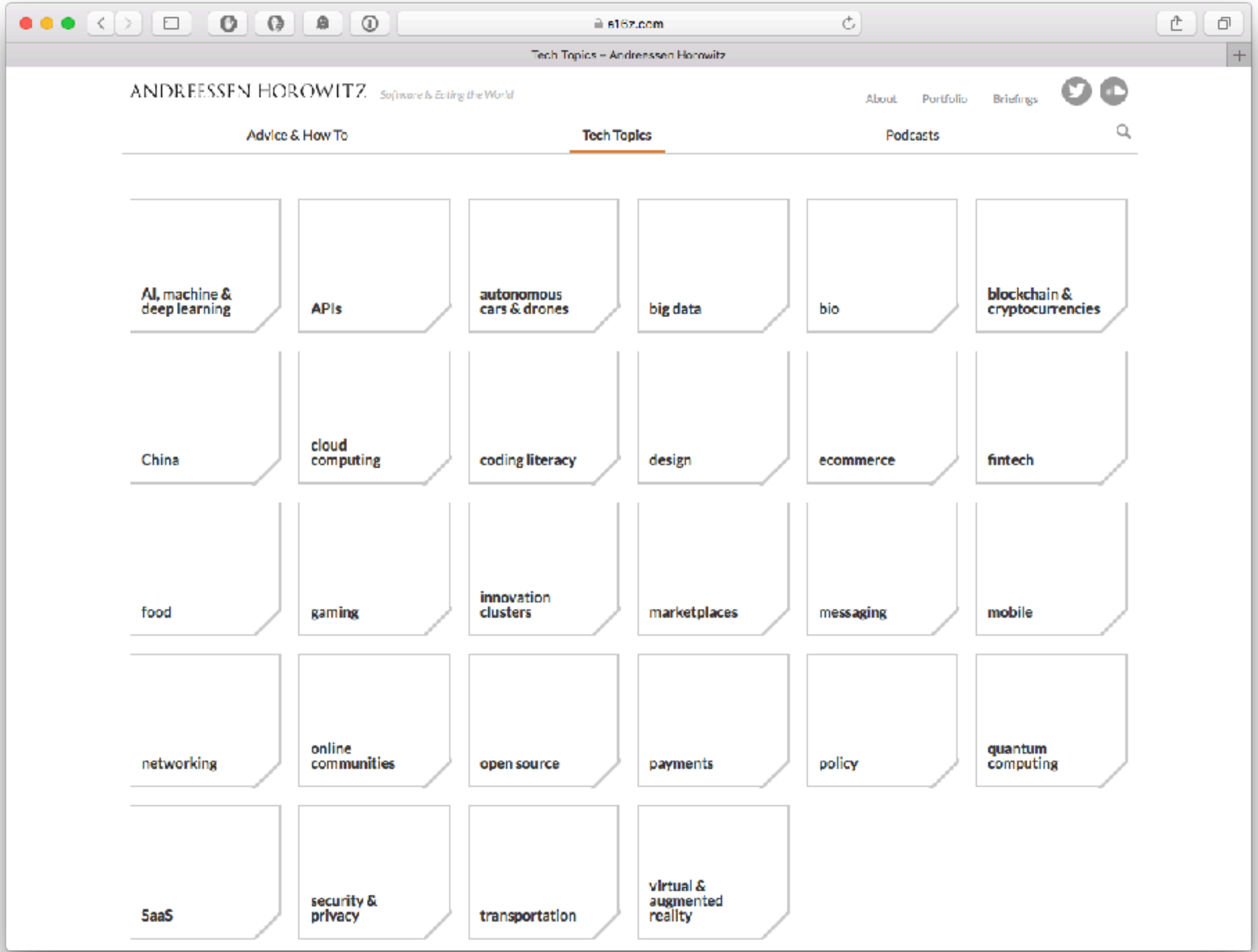
Uncertain

Complex

Ambiguous

US Army War College

Visioning Exercise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Tech Topics – Andreessen Horowitz

ANDREESSEN HOROWITZ *Software Is Eating the World*

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big data

bio

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China

cloud computing

coding literacy

design

ecommerce

fintech

food

gaming

innovation clusters

marketplaces

messaging

mobile

networking

online communities

open source

payments

policy

quantum computing

SaaS

security & privacy

transportation

virtual & augmented reality

Deloitte.

Blockchain Technology
A game-changer in accounting?

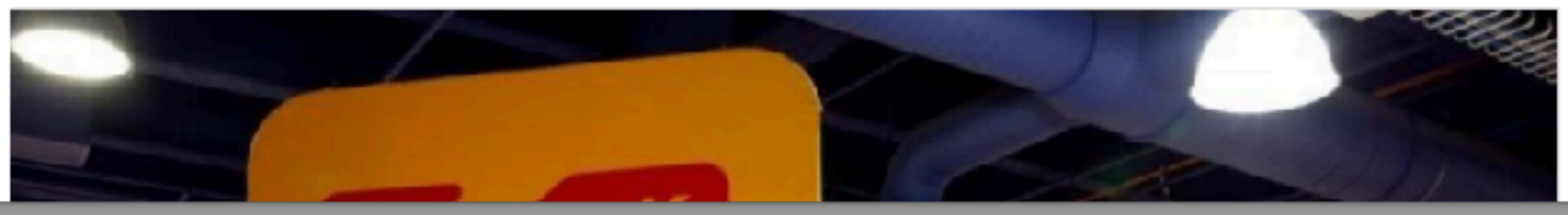
#BUSINESS NEWS JANUARY 9, 2018 / 12:44 PM / 2 DAYS AGO

Eastman Kodak unveils cryptocurrency, stock doubles

Noel Randewich

3 MIN READ

SAN FRANCISCO (Reuters) - Shares of Eastman Kodak Co (KODK.N) more than doubled on Tuesday after the one-time leader in photography became the latest company to jump on the cryptocurrency bandwagon.



There is no area of

business,

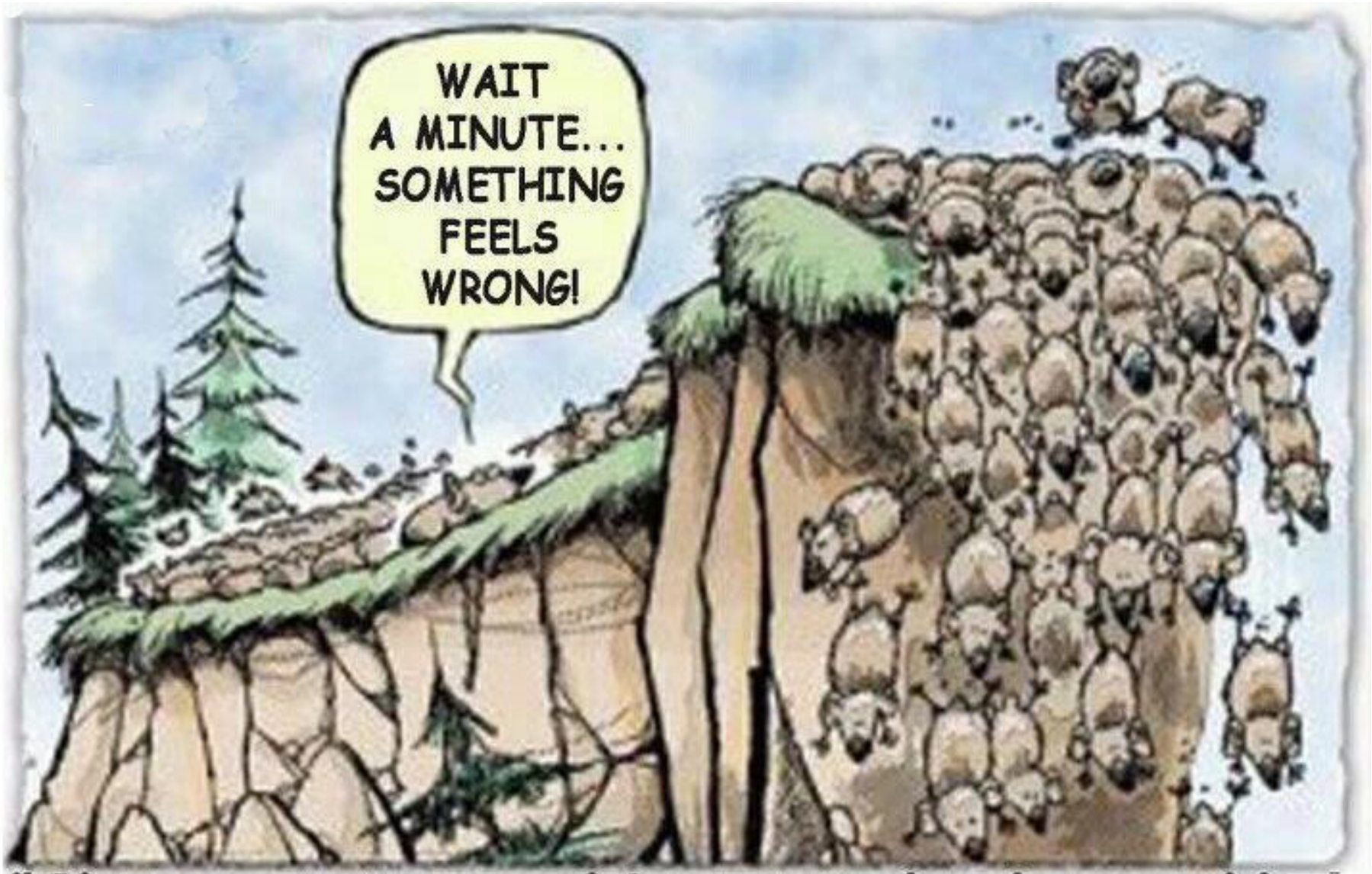
society,

or life

which technology is not

upending.


KEEP CALM
AND
Continue
Business
as usual



"Shut up, you moron! Do as you've been told
It's for your own good!"

Introduction

Who is this Person?

Professor, Department of Accountancy

Professor, School of Information Sciences

Director, University of Illinois-Deloitte Foundation, Center for Business Analytics

Data Science Expert in Residence, Research Park, University of Illinois

Affiliate Faculty, Departments of Astronomy, Computer Science, Electrical and Computer Engineering, Informatics, Physics, and Statistics

Faculty Affiliate, NCSA

Faculty Affiliate, Beckman Institute

Faculty Affiliate, Computational Science & Engineering

Deloitte's Charge

D.1.a. The overarching goal and objective of the Center will be to **further the integration of STEM disciplines in business education in said College**. To that end, the Center's activities **may include but not be limited to** the following:

- **Create and disseminate a replicable model curriculum** that provides students from across the United States with a comprehensive education in business analytics;

- **Provide faculty development opportunities in business analytics** with the goal of creating a core faculty group from across the country to convey the role and value of data in the contemporary business environment;

- **Develop faculty understanding of business analytics issues** and translate issues into course development;

- **Address new Association to Advance Collegiate Schools of Business (AACSB) standards** for requiring business analytics in accounting curriculum;

- **Establish a Center website and social media tools** to rapidly disseminate information such as educational program content, events, and best practices;

- **Establish strategic partnerships** with industry leaders, professional organizations, and key academic institutions to build a network addressing important issues.

From Signed Contract

College's Charge

University of Illinois-Deloitte Foundation
Center for Business Analytics

Innovation Engine

Accelerating bright ideas.

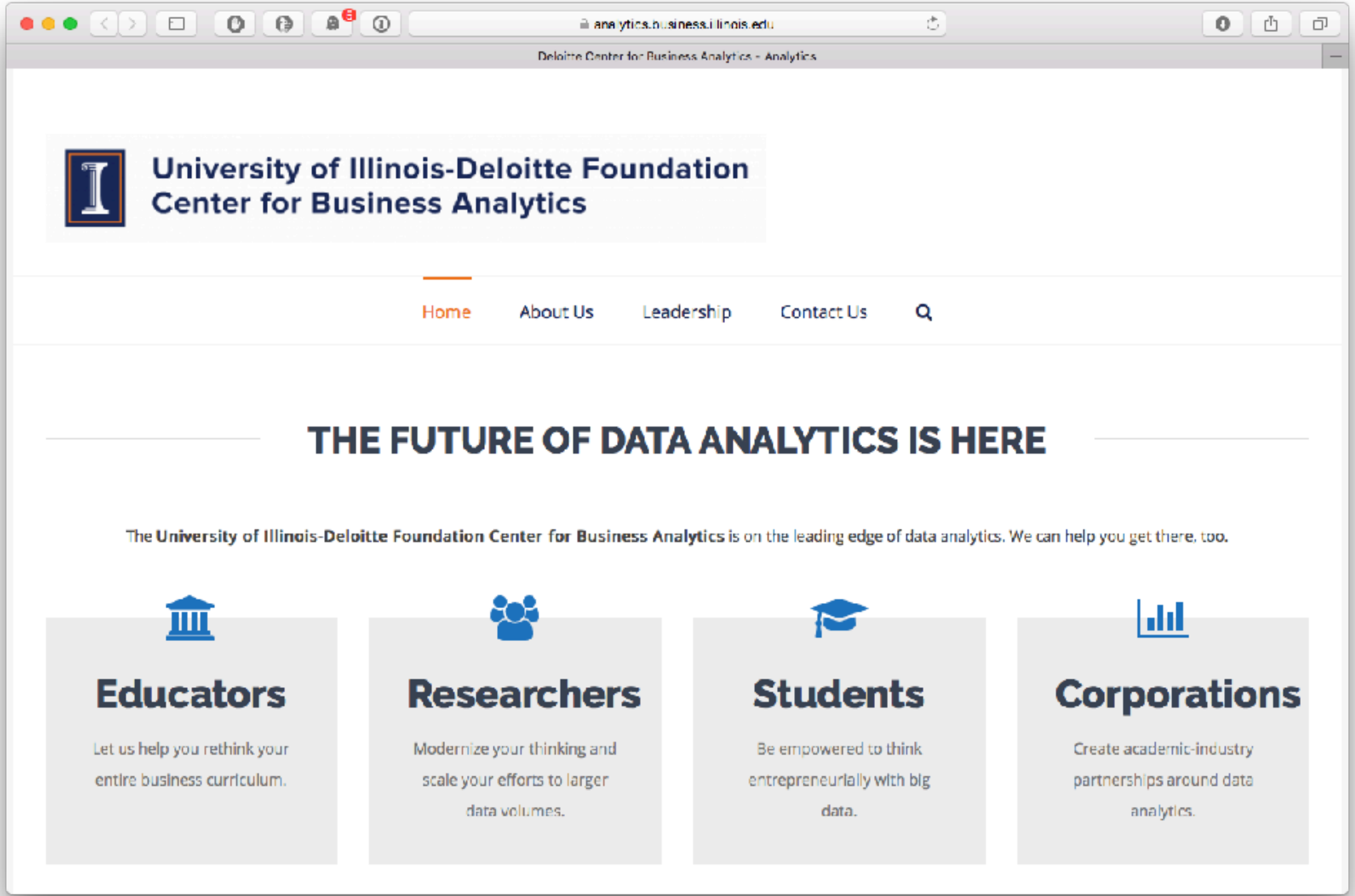
ILLINOIS
Gies College of Business

GIES

What are we doing?

UI-DF CBA

- Website & Social Media
- Analytics in Curricula
- Public Dissemination
- Case Studies
- Center Fellows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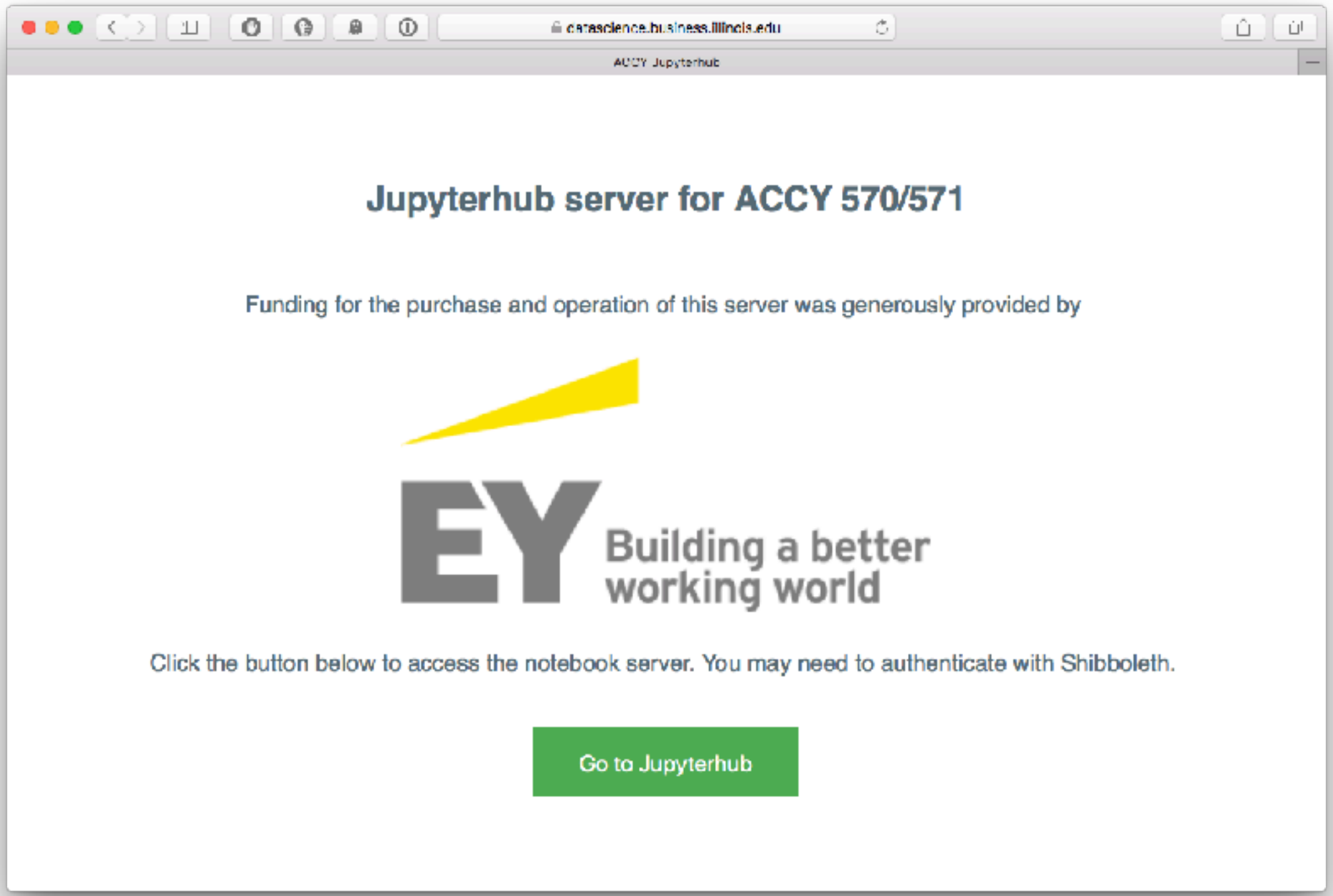
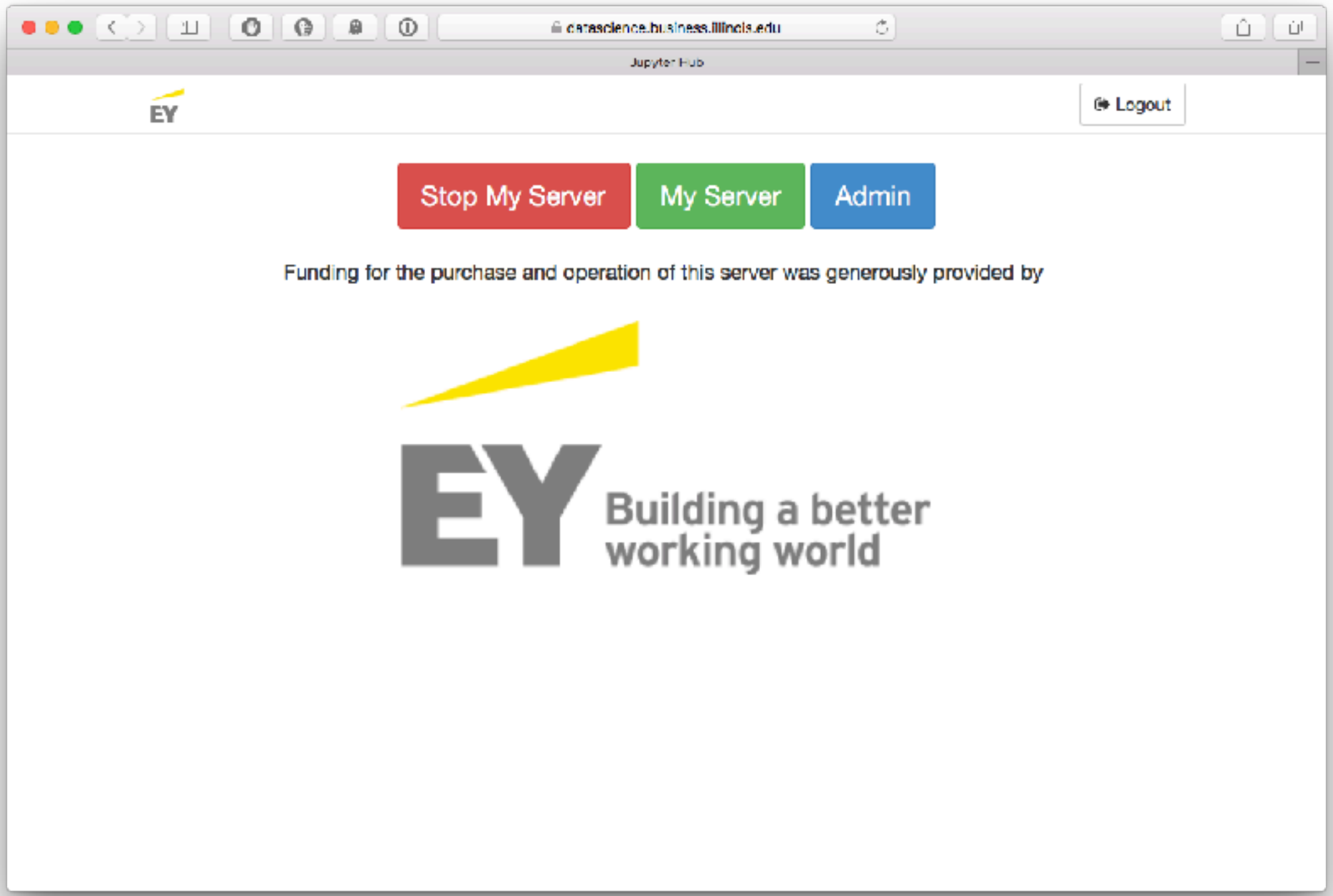
THE FUTURE OF DATA ANALYTICS IS HERE
The University of Illinois-Deloitte Foundation Center for Business Analytics is on the leading edge of data analytics. We can help you get there, too.
Educators
Let us help you rethink your entire business curriculum.
Researchers
Modernize your thinking and scale your efforts to larger data volumes.
Students
Be empowered to think entrepreneurially with big data.
Corporations
Create academic-industry partnerships around data analytics.

Analytics in Curricula



Analytics in Curricula



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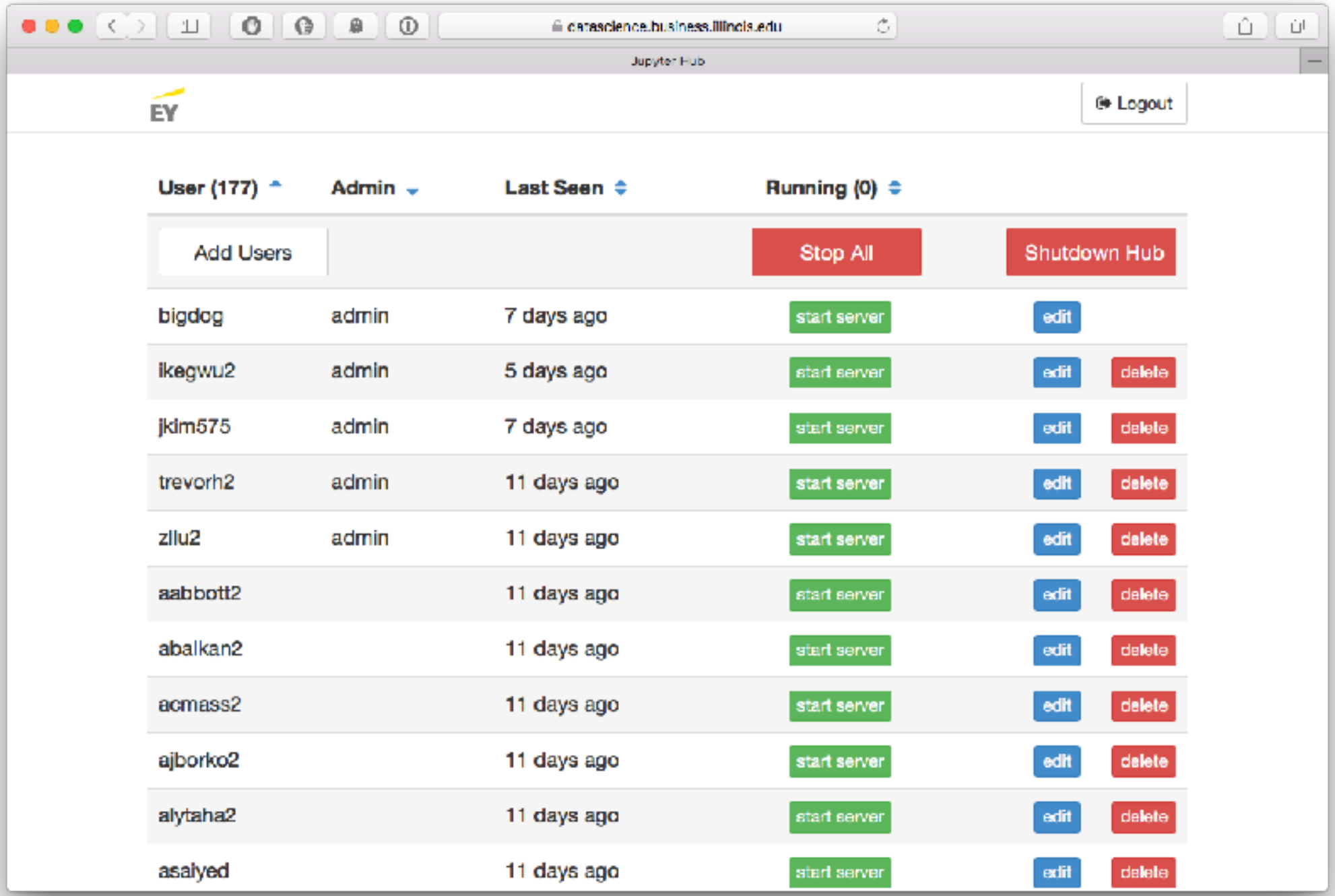

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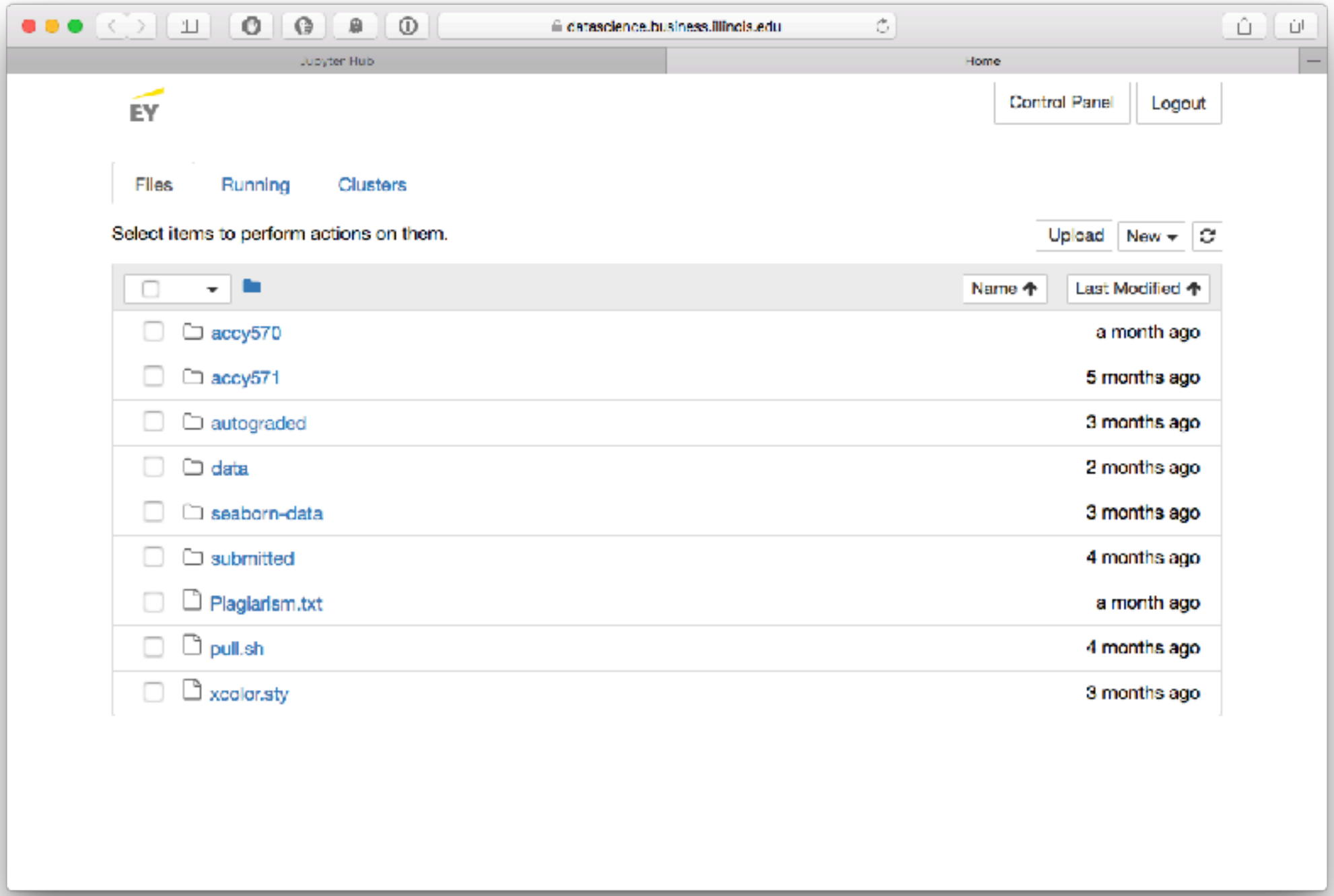
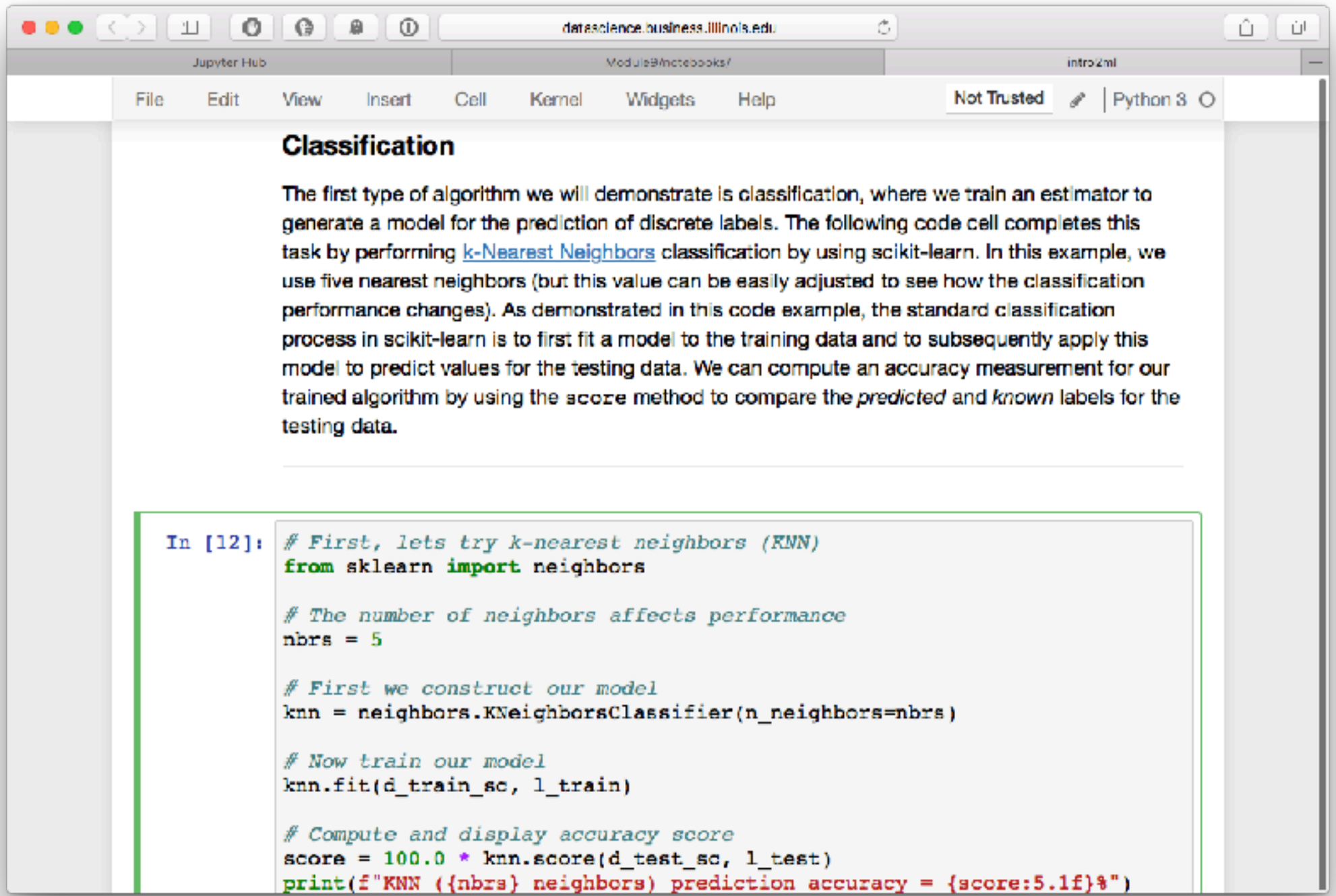
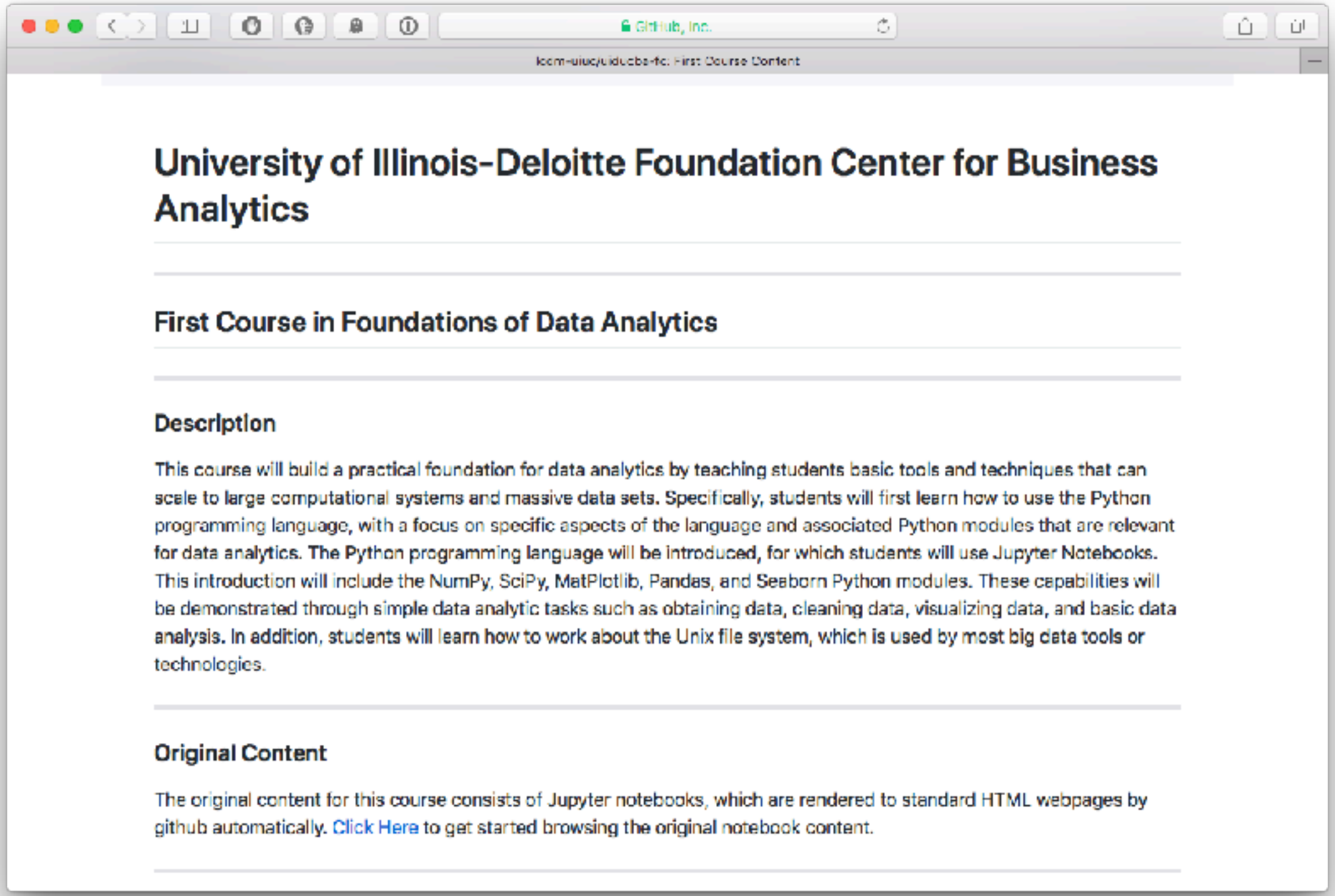


Analytics in Curricula



Analytics in Curricula



UIDF-CBA Fellows

Ramanath Subramanyam

Jessen Hobson

Vic Anand

Undergraduate

Analytics in Curricula

Proposed Syllabus
Business Analytics I - BADM 210
Credits: 3 Hours

Course Description:
The focus of this introductory business analytics course will be on collecting, describing and interpreting data in the context of business decisions. The course will introduce the concepts of a data life cycle, data visualization, and data summarization. Students will be able to perform and understand essential statistical inference methods including hypothesis testing and multivariate regression. Students will learn how to identify, describe and frame business opportunities through evidence-based storytelling and hands-on learning using spreadsheets and data visualization tools. The problem contexts will span the business domain areas (e.g., Marketing, Operations, Finance, Accounting, and Technology).

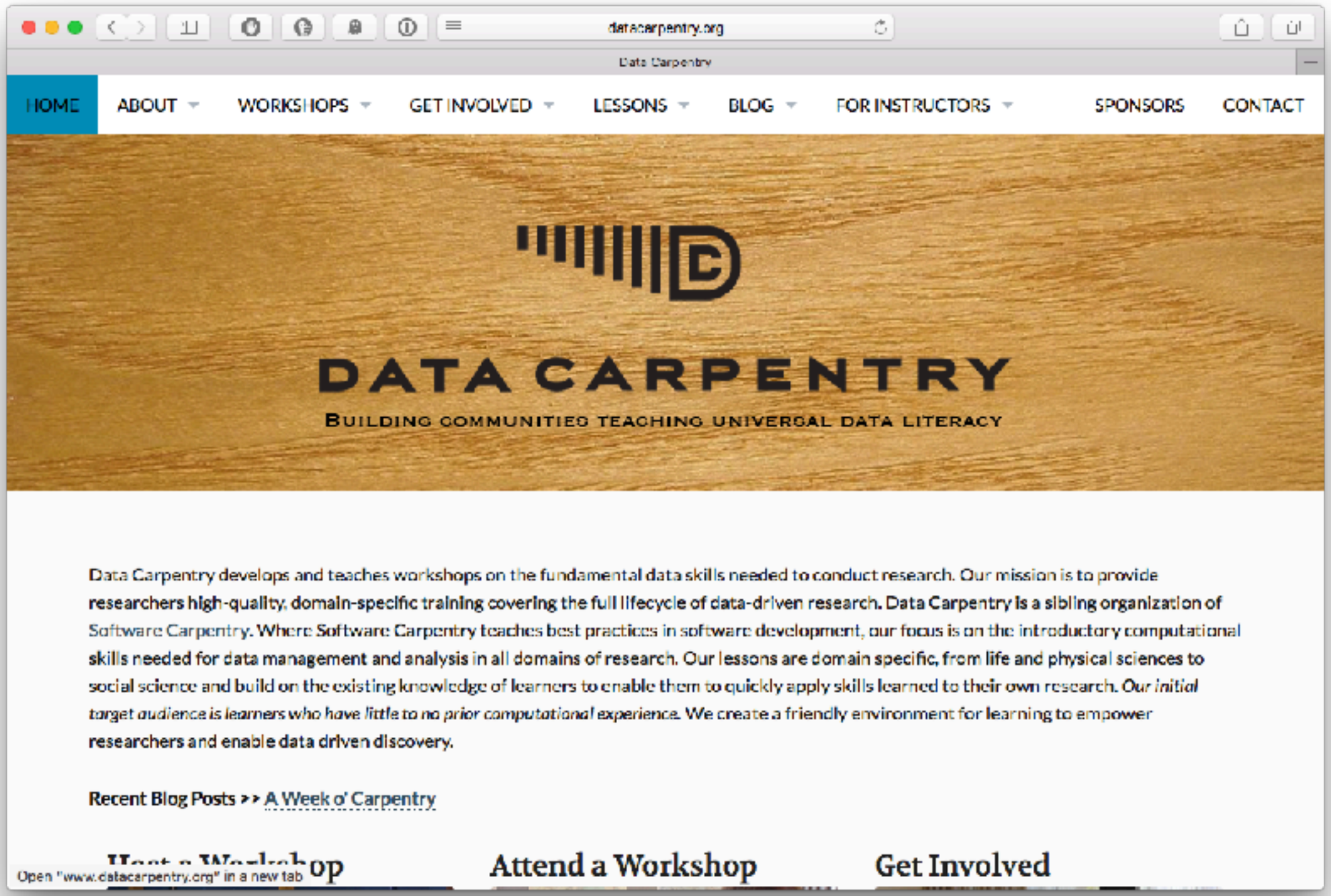
College-wide foundation for more advanced curricula

Proposed Syllabus
Business Analytics II – BADM 211
Credits: 3 Hours

Course Objective:

This course builds on the foundation from the Business Analytics I (BADM 210) course, and introduces the students to analyzing, learning, and prediction using advanced analytics techniques and tools for generating business insights. This course will provide a practical introduction to unsupervised learning techniques such as clustering and text mining, supervised learning techniques such as classification and decision trees, and temporal learning techniques such as time series analysis. Finally, the course will introduce students to advanced and emerging topics in predictive analytics. The course synthesizes concepts through hands-on application and project-based learning. Students will learn to identify opportunities for improving business decisions using data, conduct relevant analysis of the gathered and cleaned data, and finally, interpret and present analysis outcomes to decision makers.

Education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BUILDING COMMUNITIES TEACHING UNIVERSAL DATA LITERACY
Data Carpentry develops and teaches workshops on the fundamental data skills needed to conduct research. Our mission is to provide researchers high-quality, domain-specific training covering the full lifecycle of data-driven research. Data Carpentry is a sibling organization of Software Carpentry. Where Software Carpentry teaches best practices in software development, our focus is on the introductory computational skills needed for data management and analysis in all domains of research. Our lessons are domain specific, from life and physical sciences to social science and build on the existing knowledge of learners to enable them to quickly apply skills learned to their own research. Our initial target audience is learners who have little to no prior computational experience. We create a friendly environment for learning to empower researchers and enable data driven discovery.
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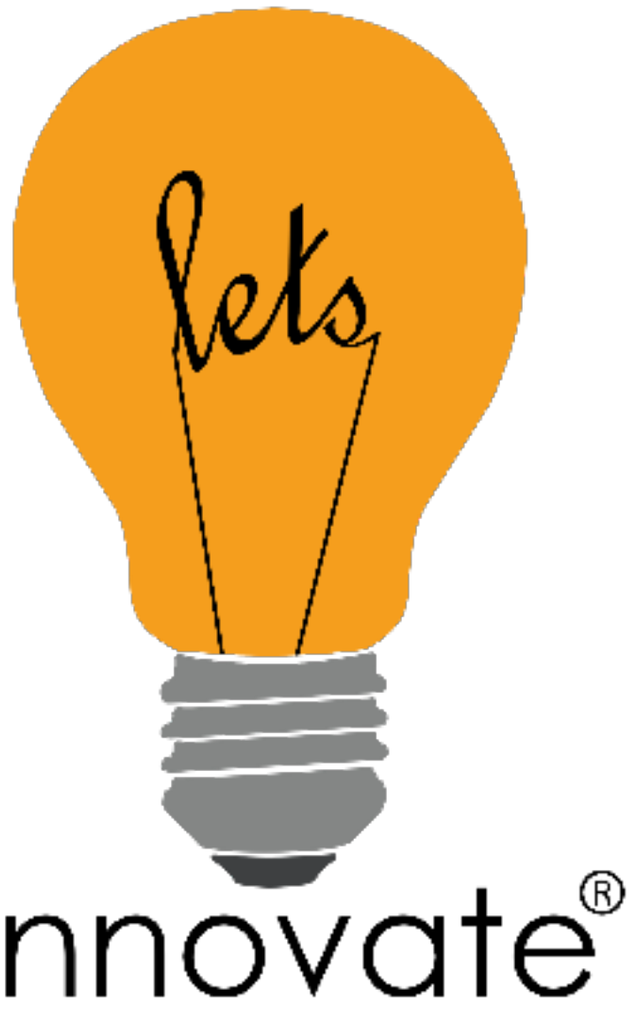
Need a leader

Education

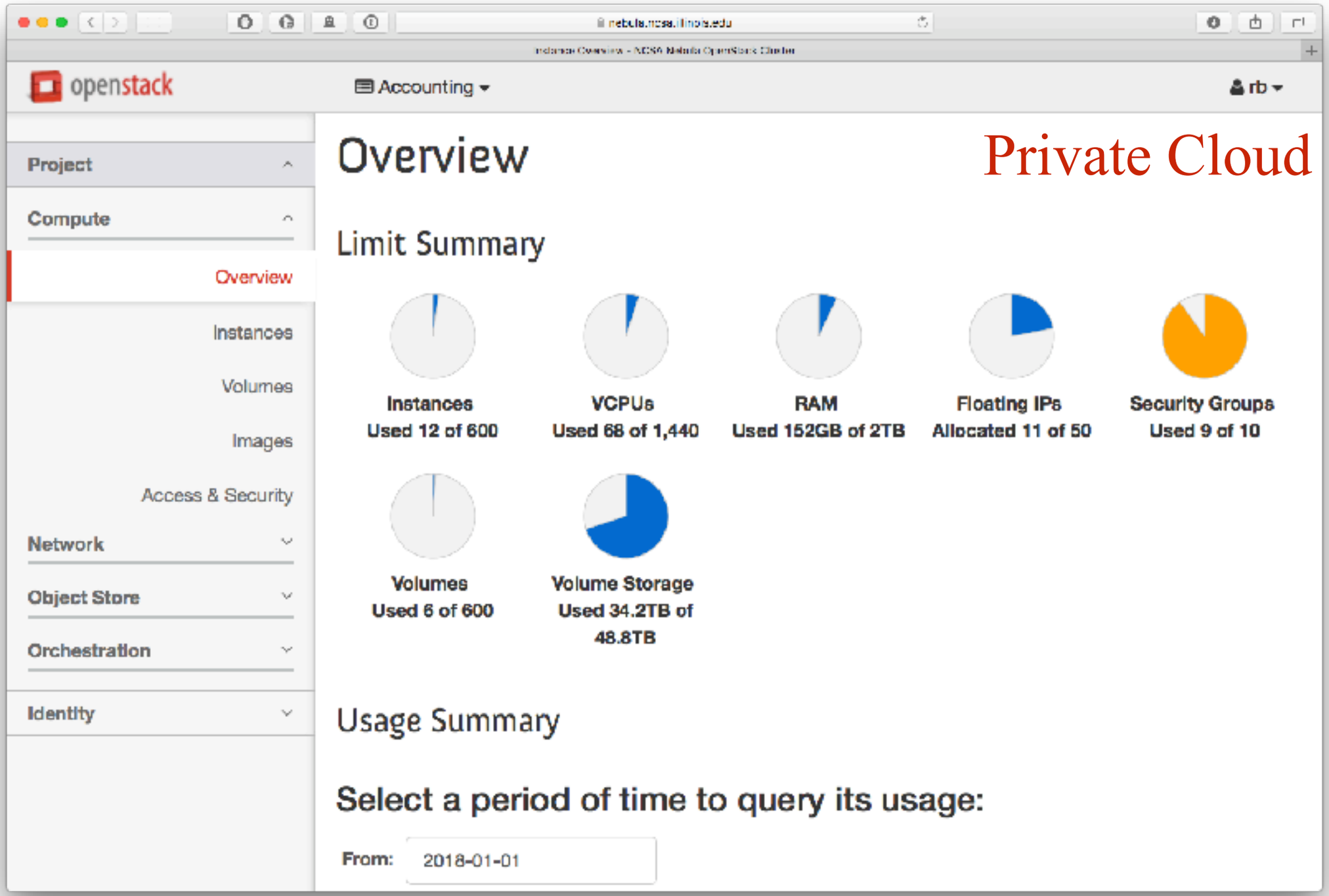
What might we do?

UI-DF CBA

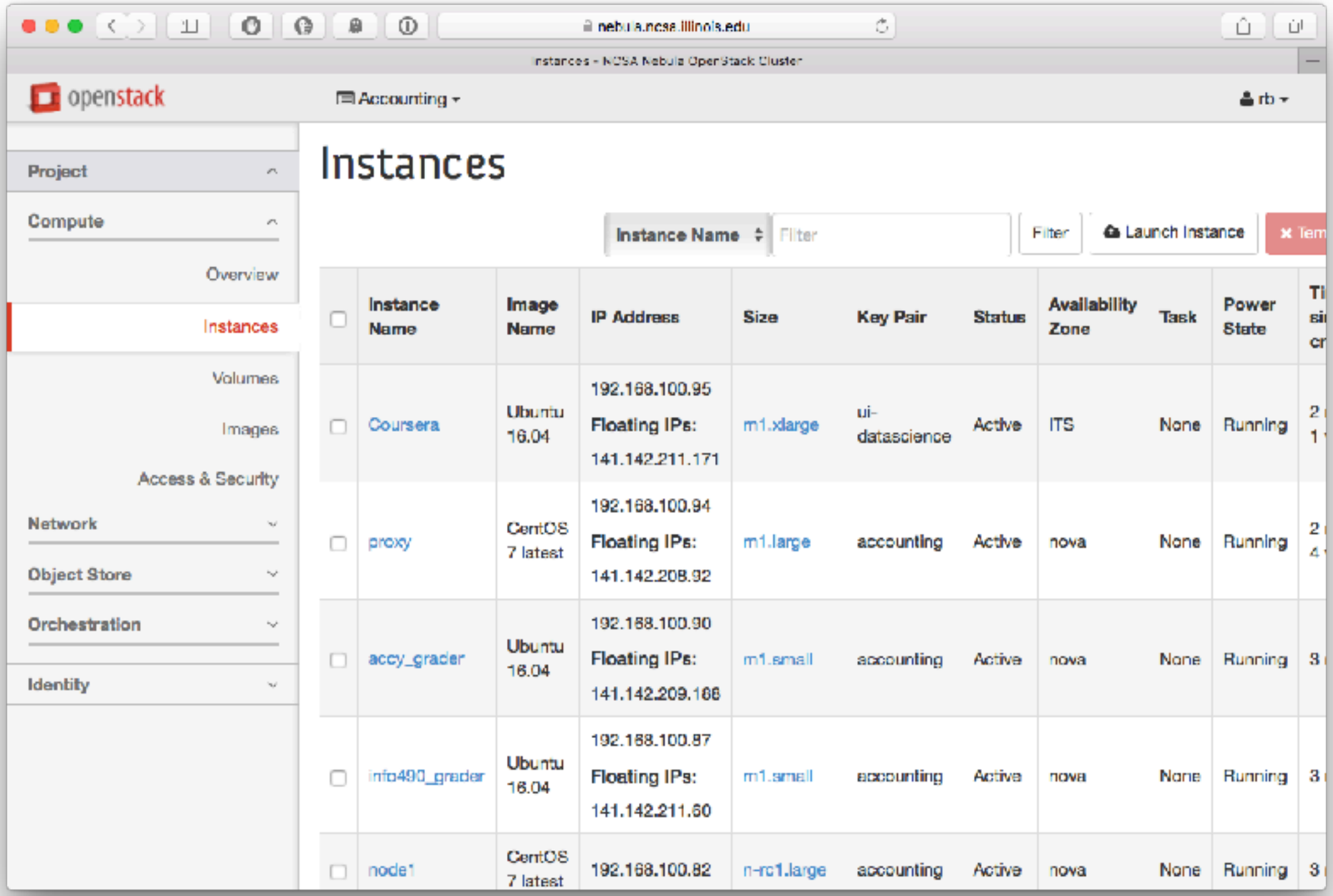
- Education
- Research
- Engagement
- Conferences



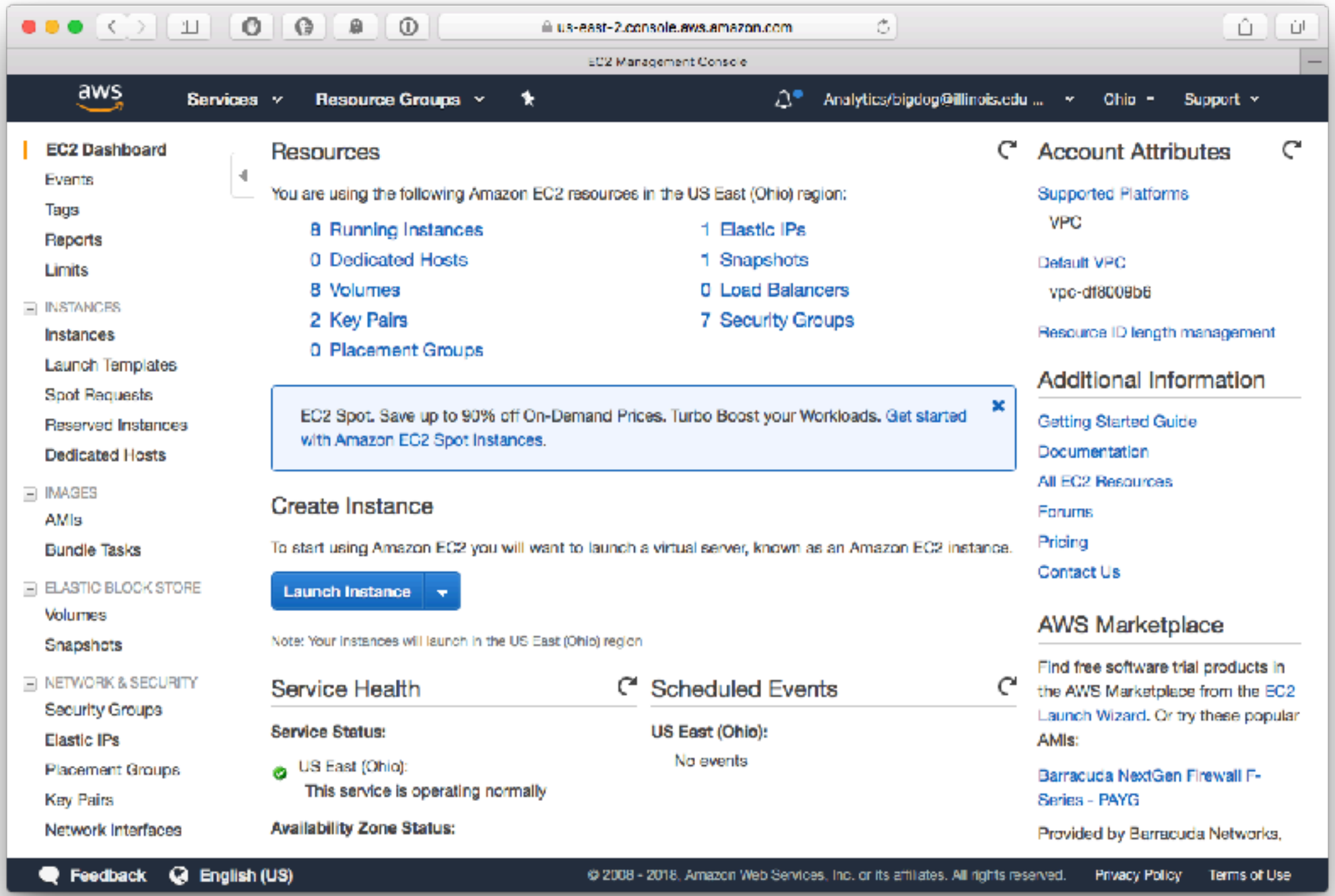
Best Practices



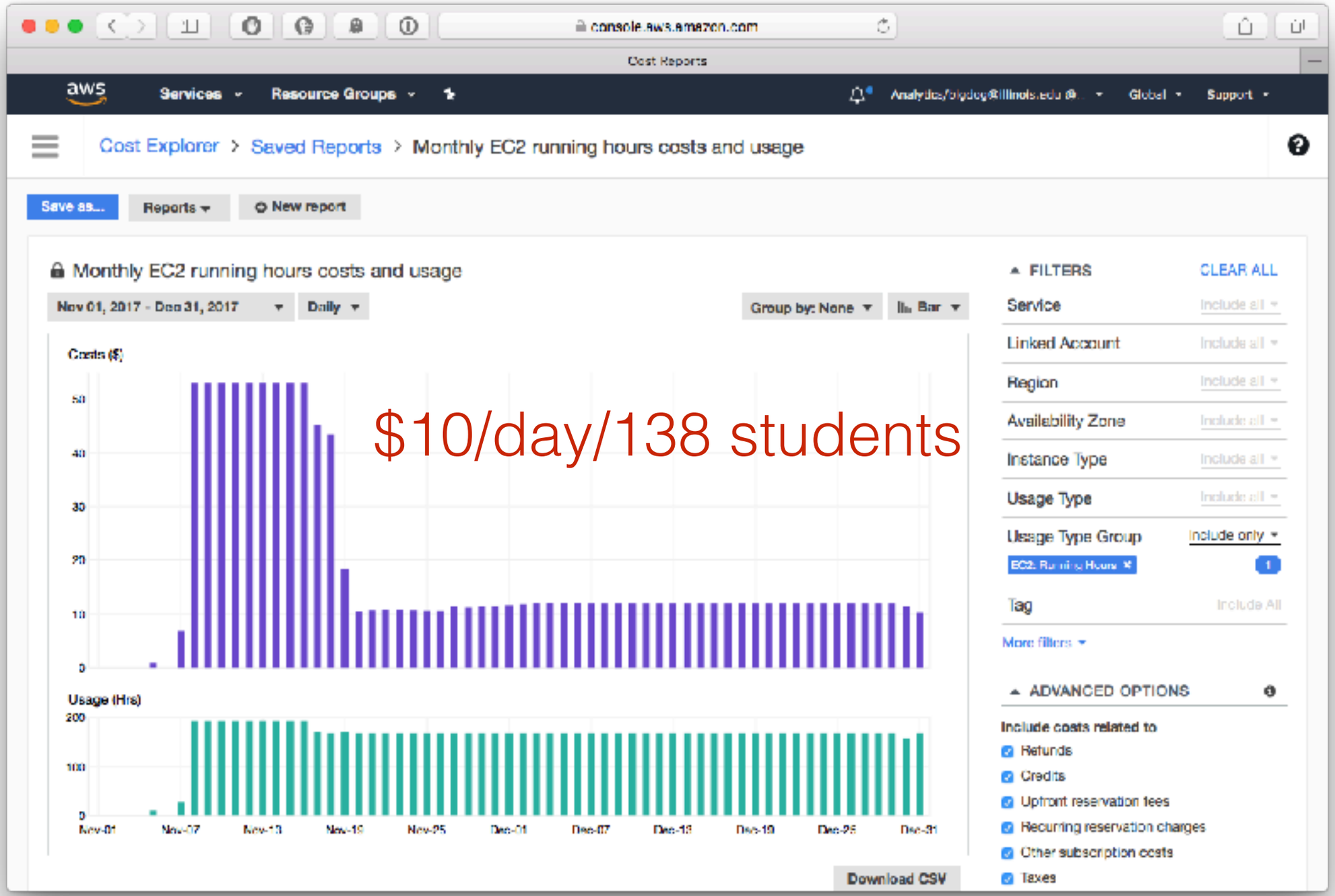
Best Practices



Best Practices



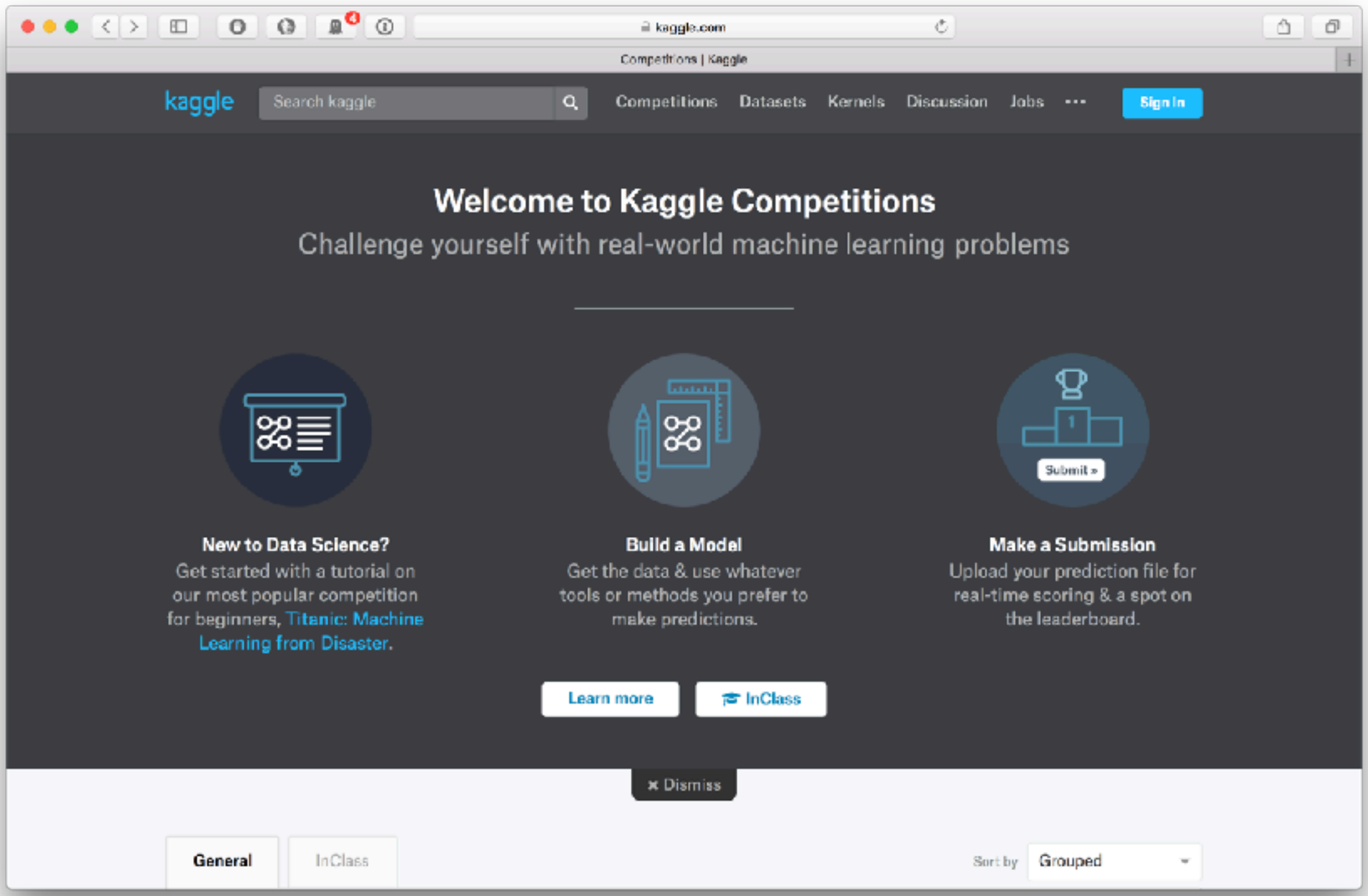
Best Practices



Private/Public
Data Repository

Engage Industry Partners

Data + Ideas



Analytics in Research

Connect Faculty

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Analytics
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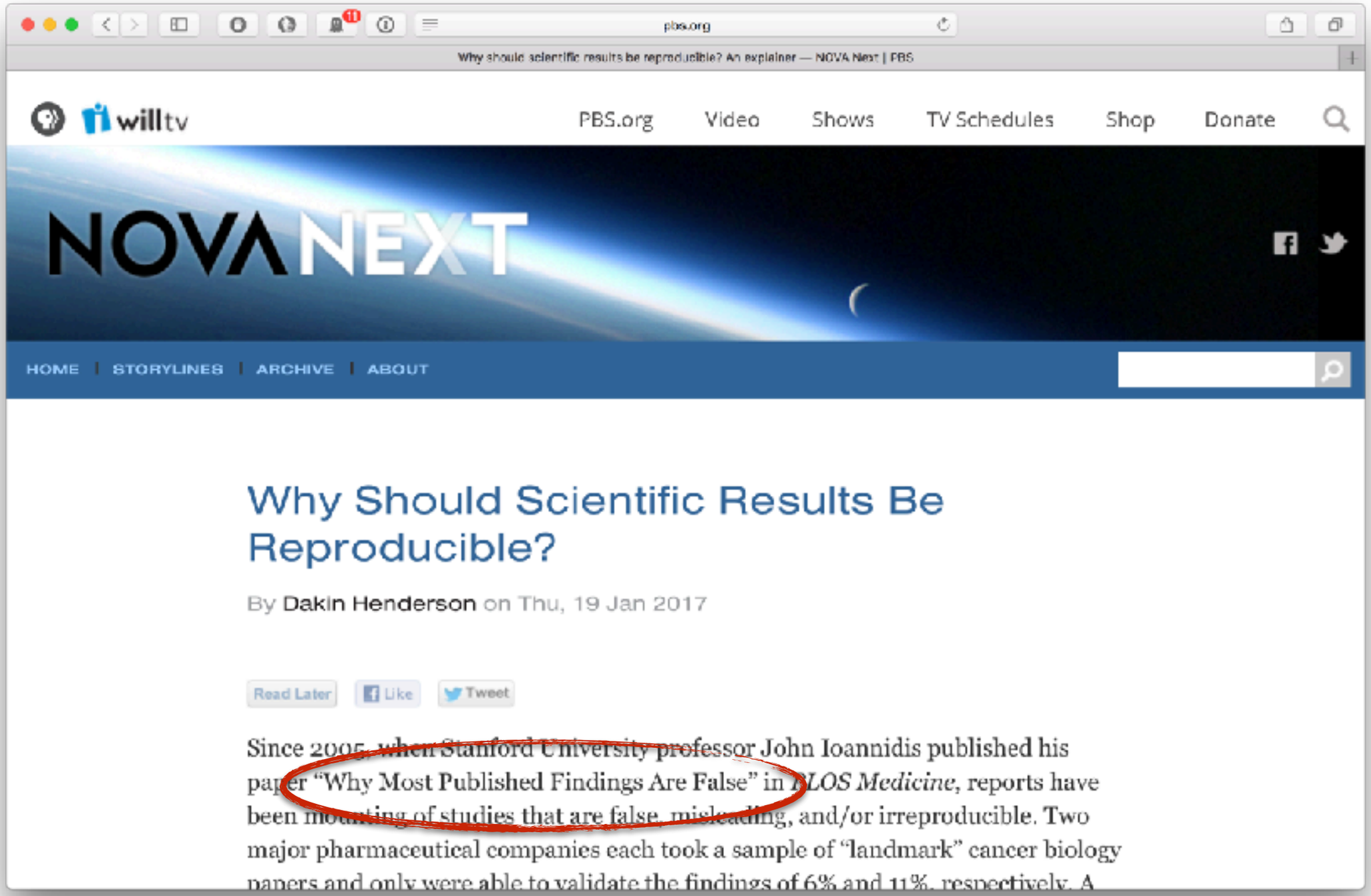
Research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By Dakin Henderson on Thu, 19 Jan 2017
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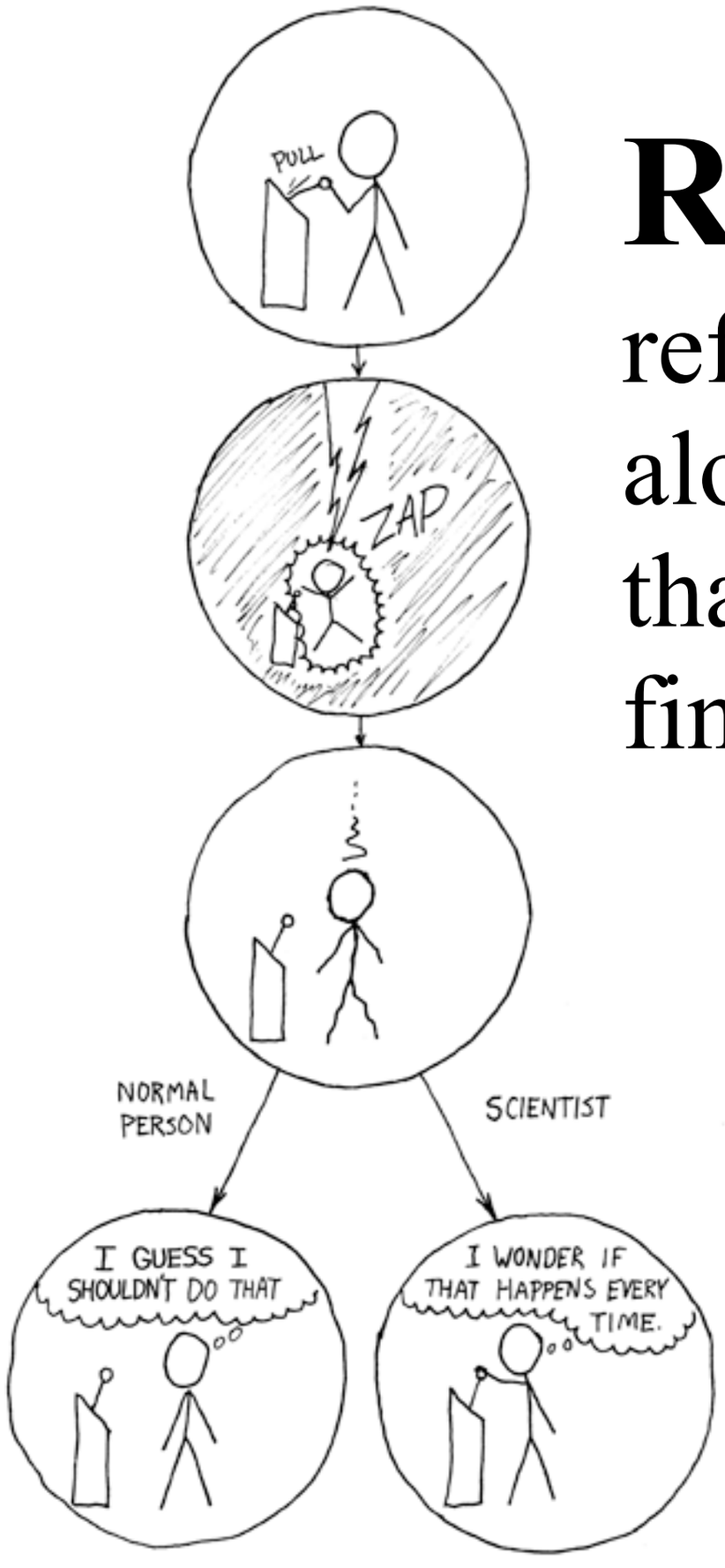
Since 2005, when Stanford University professor John Ioannidis published his paper "Why Most Published Findings Are False" in PLOS Medicine, reports have been mounting of studies that are false, misleading, and/or irreproducible. Two major pharmaceutical companies each took a sample of "landmark" cancer biology papers and only were able to validate the findings of 6% and 11%, respectively. A

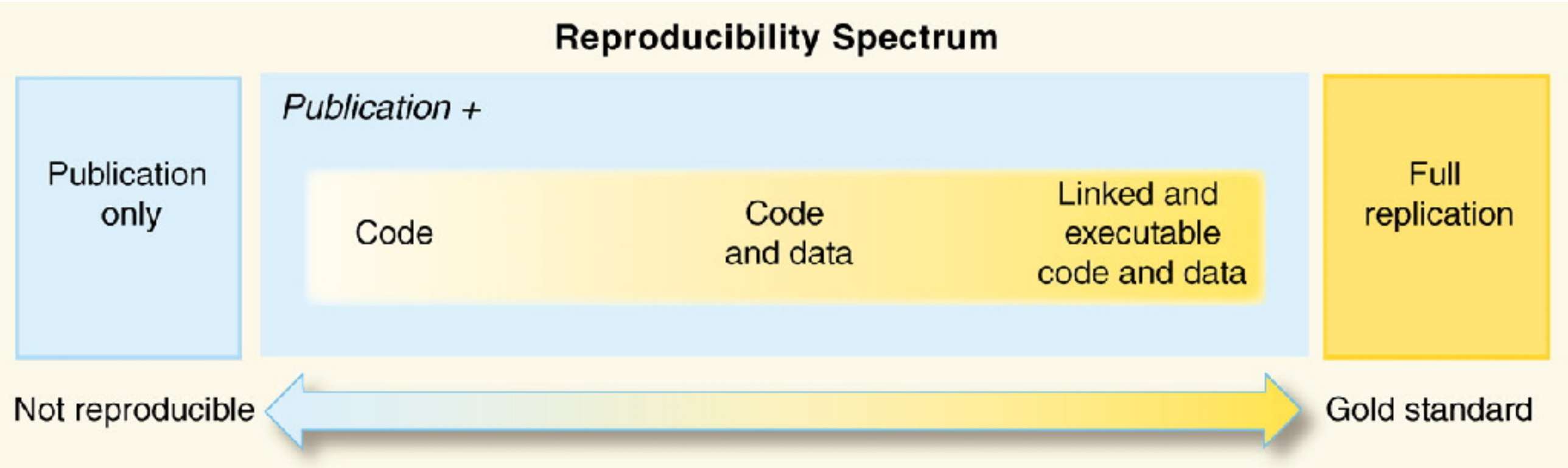


Reproducible research

refers to analyses that are published along with their data and code so that others can easily verify the findings and build upon them.

Annual Report of the Office of Economic Research, FY 2016

Reproducible Research



But how?

Science 02 Dec 2011:
Vol. 334, Issue 6060, pp. 1226-1227
DOI: 10.1126/science.1213847

Reproducible Research

jupyter

docker

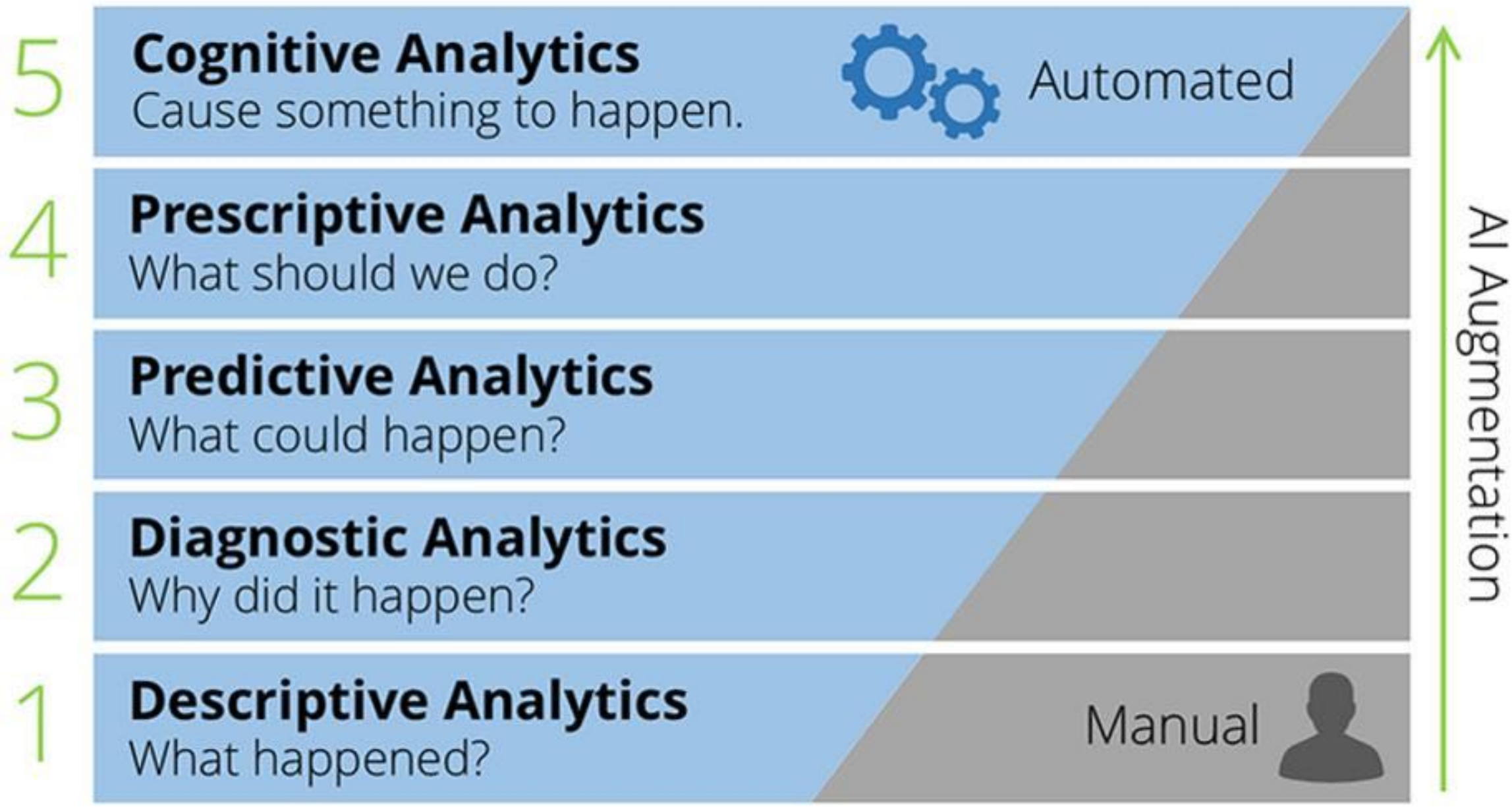
GitHub

APACHE Spark™

RStudio®

aws

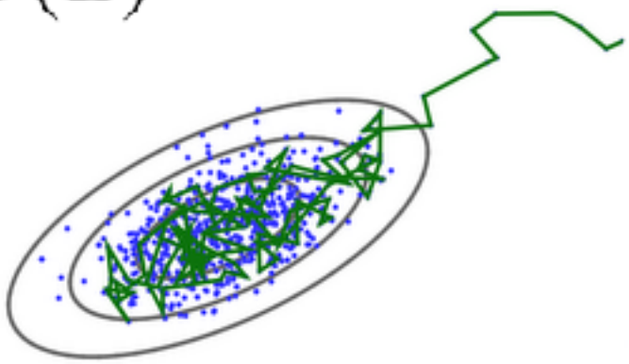
Innovations in Research

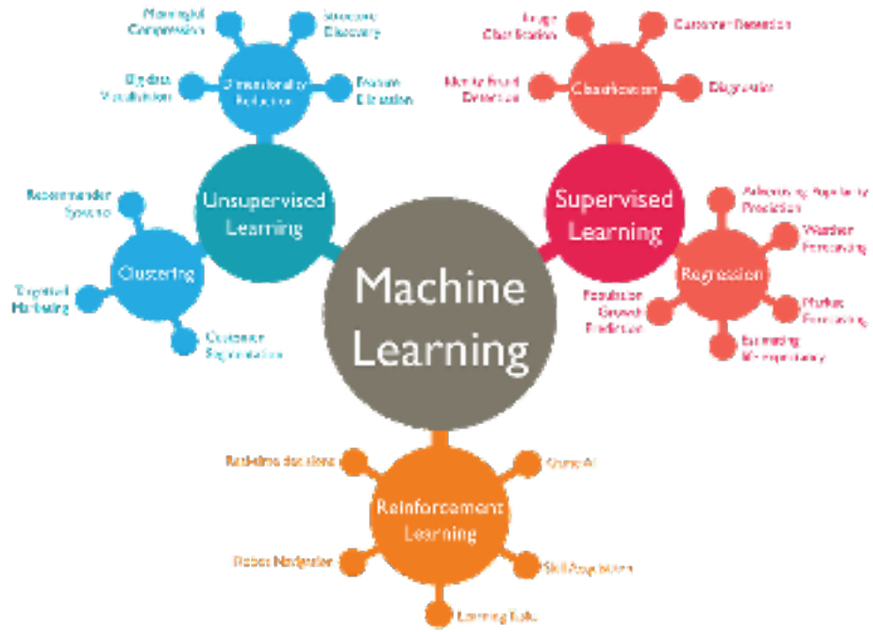


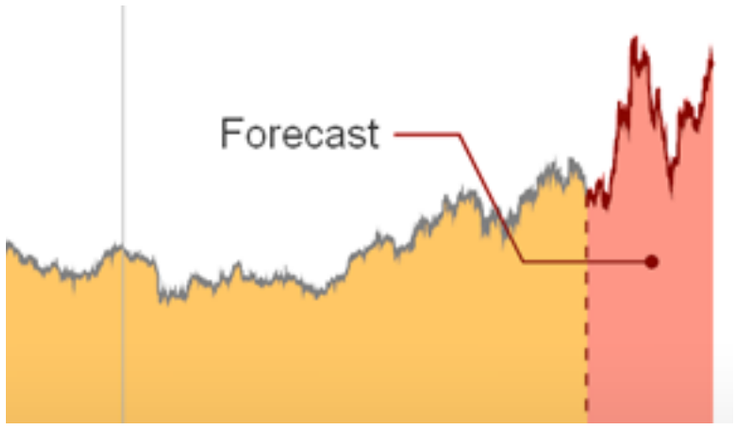
Innovations in Research

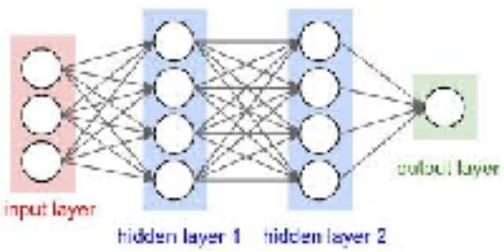
$$P(A \mid B) = \frac{P(B \mid A)P(A)}{P(B)}$$

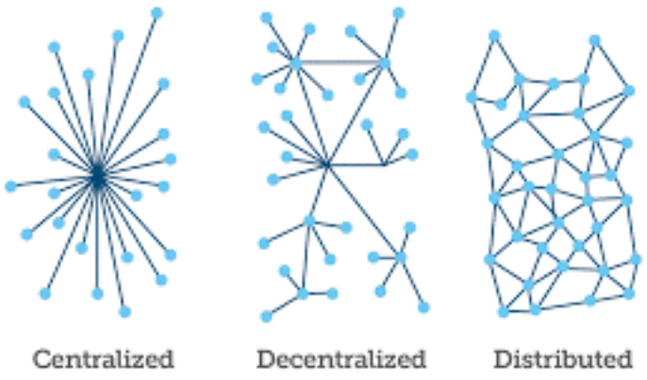
PyMC3











BLOCKCHAIN

Keras

TensorFlow™

Engagement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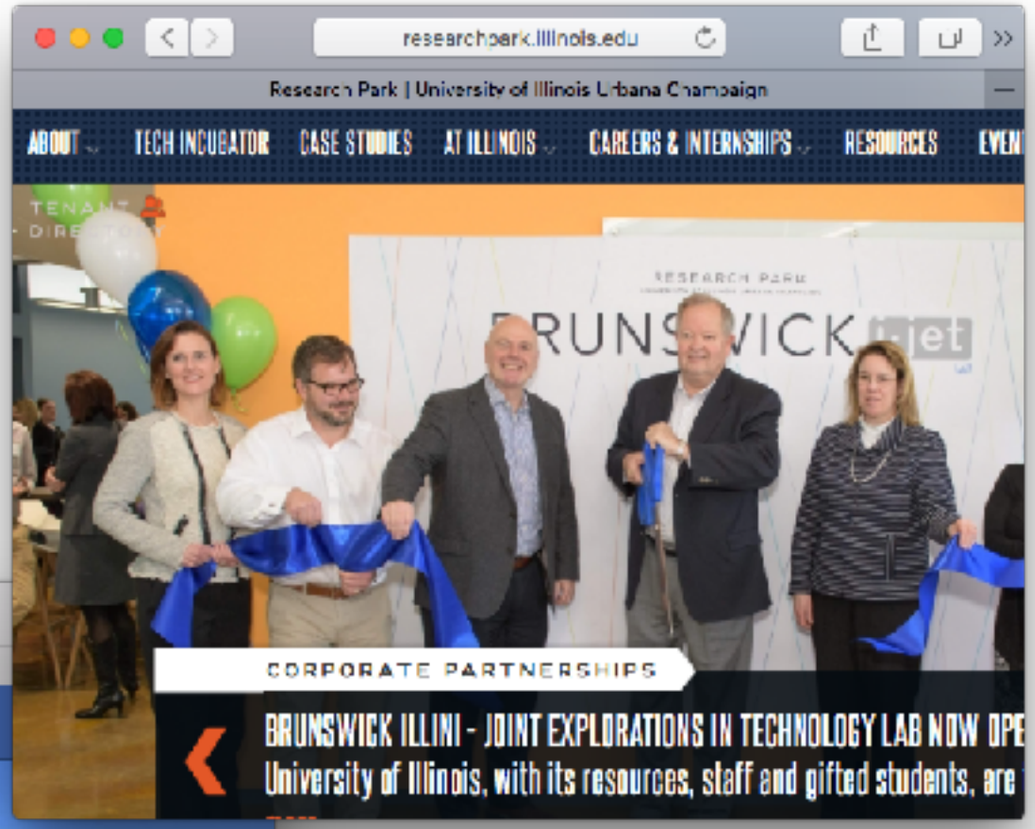
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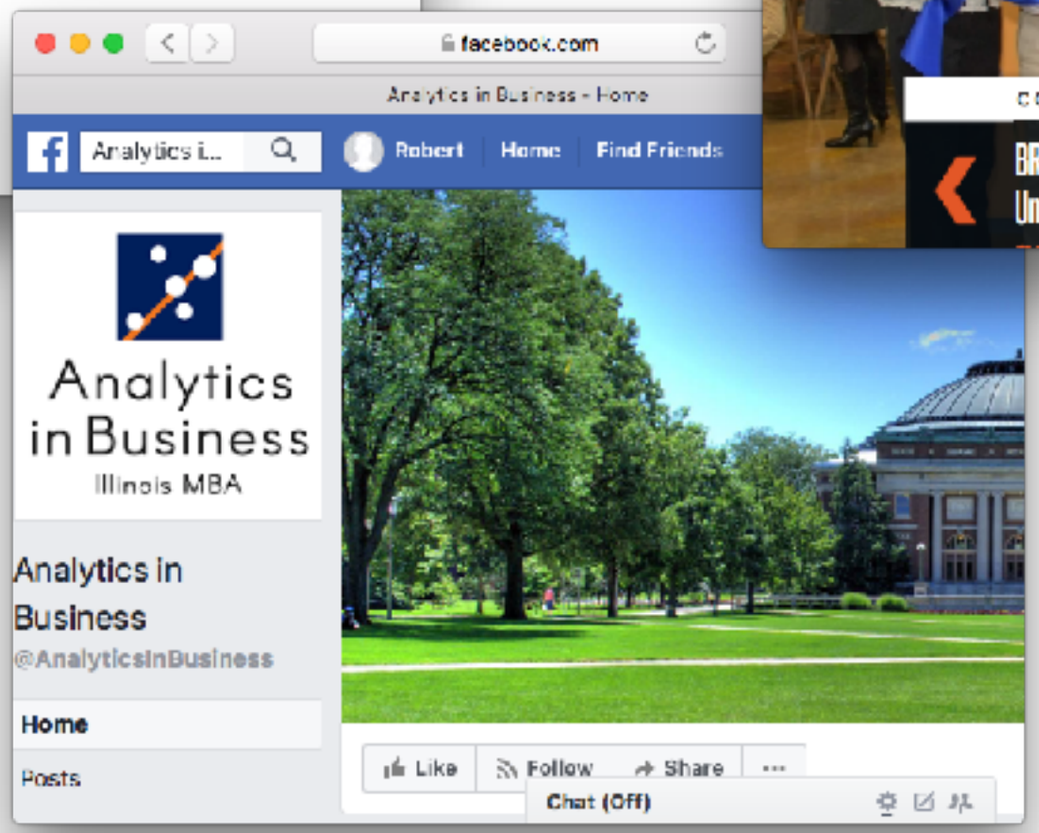
University of Illinois, with its resources, staff and gifted students, are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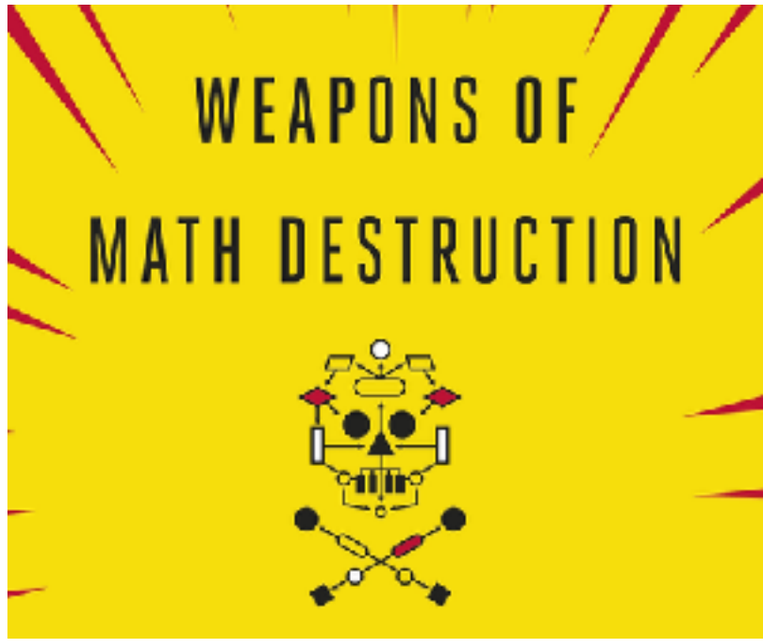
UIDF-CBA Fellows

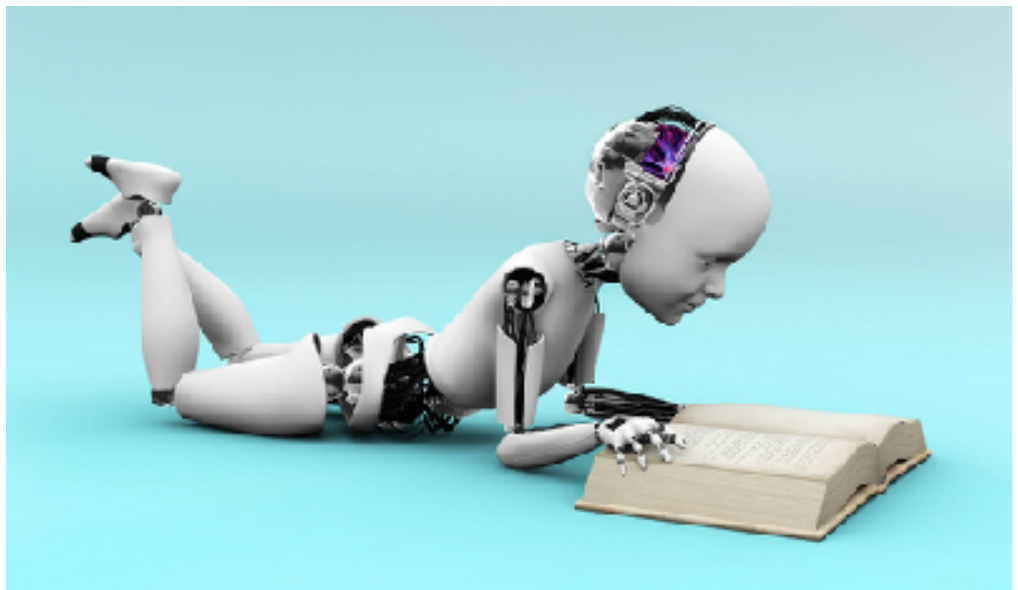
Ethics in ML

Center for Professional Responsibility in Business and Society

Center for Business Analytics

October 2018





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Thank you

How can you engage?