Big Data Applications & Analytics

1. **Course Description:** The Big Data Applications & Analytics course is an overview course in Data Science and covers the applications and technologies (data analytics and clouds) needed to process the application data. It is organized around rallying cry: Use Clouds running Data Analytics Collaboratively processing Big Data to solve problems in X-Informatics.

2. **Course prerequisites:** Python or Java experience (programming load is modest)

3. **Topics covered:** The course covers applications/analytics, technologies and a modest amount of programming with two choices – Python usually run on your local machine (but available in cloud) or Java which can be run on a cloud (private (OpenStack), Amazon or Azure) or again on your laptop in less ambitious fashion. Big Data Applications include a broad overview of 51 big data use cases from NIST, discovery of Higgs particle from accelerator data, web search, e-commerce, sports, health, remote sensing, and Internet of Things. Technologies focus on cloud and parallel computing (introduction) with analytics including clustering, visualization, MapReduce and PageRank.

4. **Representative bibliography:**
   
i. [https://bigdatacoursespring2015.appspot.com](https://bigdatacoursespring2015.appspot.com) Spring 2015 Class
   
   
   
   
v. There are many web resources

5. **Student learning outcomes:** Broad understanding of Big Data application areas and approaches used. Good preparation for any student likely to be involved with Big Data in their future.

6. **How graded:** 50% Homework, 30% term paper/project, 20% participation

7. The videos are online. See [https://bigdatacoursespring2015.appspot.com/preview](https://bigdatacoursespring2015.appspot.com/preview) for last time course offered. You can watch videos in in embedded mode or on YouTube

8. Full Syllabus [https://iu.box.com/s/6ax4igg7tpzzpcj0aj4i](https://iu.box.com/s/6ax4igg7tpzzpcj0aj4i)

9. This course uses MOOC technology (Google Course Builder) but is organized as a regular course with a mix of recorded lectures, programming examples and Google+ community discussions. All lectures are posted before course starts. Each week we will post on Canvas and the Community Group, the instructions as to work to be done. Note all homeworks and grading will use Canvas.