Syllabus

This is a single, concatenated file, suitable for printing or saving as a PDF for offline viewing. Please note that some animations or images may not work.

Description

This module is also available as a concatenated page, suitable for printing or saving as a PDF for offline viewing.

MET CS 777

Big Data Analytics

This course is an introduction to large-scale data analytics. Big Data analytics is the study of how to extract actionable, non-trivial knowledge from massive amount of data sets. This class will focus both on the cluster computing software tools and programming techniques used by data scientists, as well as the important mathematical and statistical models that are used in learning from large-scale data processing. On the tools side, we will cover the basics systems and techniques to store large-volumes of data, as well as modern systems for cluster computing based on Map-Reduce pattern such as Hadoop MapReduce, Apache Spark and Flink.

Students will implement data mining algorithms and execute them on real cloud systems like Amazon AWS, Google Cloud or Microsoft Azure by using educational accounts. On the data mining models side, this course will cover the main standard supervised and unsupervised models and will introduce improvement techniques on the model side.

> **Technical Notes**
>
> The table of contents expands and contracts (+/- sign) and may conceal some pages. To avoid missing content pages, you are advised to use the next/previous page icons in the top right corner of the learning modules.
>
> This course requires you to access files such as word documents, PDFs, and/or media files. These files may open in your browser or be downloaded as files, depending on the settings of your browser.

Learning Objectives

By successfully completing this course you will be able to:

- Explain the main challenges of Big Data Processing
- Run a Big Data Processing pipeline on Amazon AWS and Google Cloud
- Implement Big Data code in Apache Spark (in PySpark)
- Run Supervised and Unsupervised machine learning on Large-Scale Data

Instructor and Course Developer

Kia Teymourian, Ph.D.

Computer Science Department

Metropolitan College

Boston University

1010 Commonwealth Avenue, 3rd floor

kiat@bu.edu

Dr. Kia Teymourian is an Assistant Professor of Computer Science at Boston University's Metropolitan College. Dr. Teymourian holds a PhD from Freie Universität Berlin as well as a MS and BS from Berlin University of Technology (TU-Berlin). His computer science expertise lies in data stream processing and complex event processing, big data programming, semantic technologies, and knowledge representation, as well as web technologies and natural language processing. He has made important contributions to multiple large and international research projects, including several funded by the European Commission, the German Federal Ministry of Education and Research (BMBF), and the DARPA Pliny Project at Rice University. He is a senior member of Institute of Electrical and Electronics Engineers (IEEE), and a member of the Association for Computing Machinery (ACM). At Metropolitan College, Dr. Teymourian teaches data analysis and visualization, as well as software design patterns.

Additional information can be found on Dr. Teymourian's Academic Website.

Materials

Required Book

There is no required textbook for the class. All class material will be conveyed during lecture.

Recommended Books

Murphy, K. (2012). *Machine Learning: A Probabilistic Perspective*
The MIT Press

ISBN-13: 978-0262018029
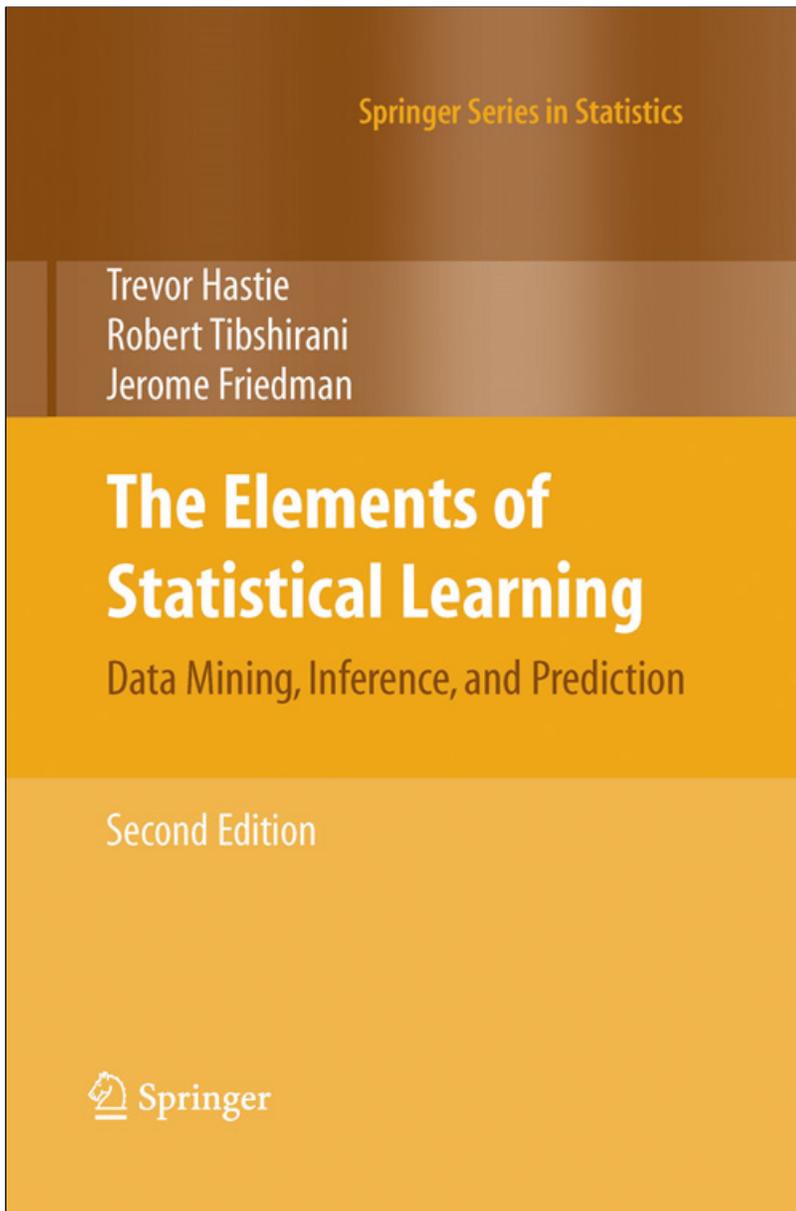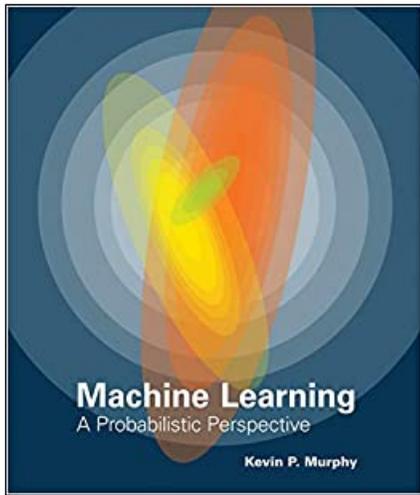
Hastie, T. and Tibshirani, R. (2009). *The Elements of Statistical Learning: Data Mining, Inference, and Prediction* (2nd ed.).
Springer-Verlag.

ISBN-13: 978-0-387-84858-7

This book is available for PDF download at
https://web.stanford.edu/~hastie/ElemStatLearn/.

Han, J., Kamber, M., Pei, J. (2009). *Data Mining: Concepts and Techniques* (3rd ed.).
Morgan Kaufmann.

ISBN-13: 978-9380931913
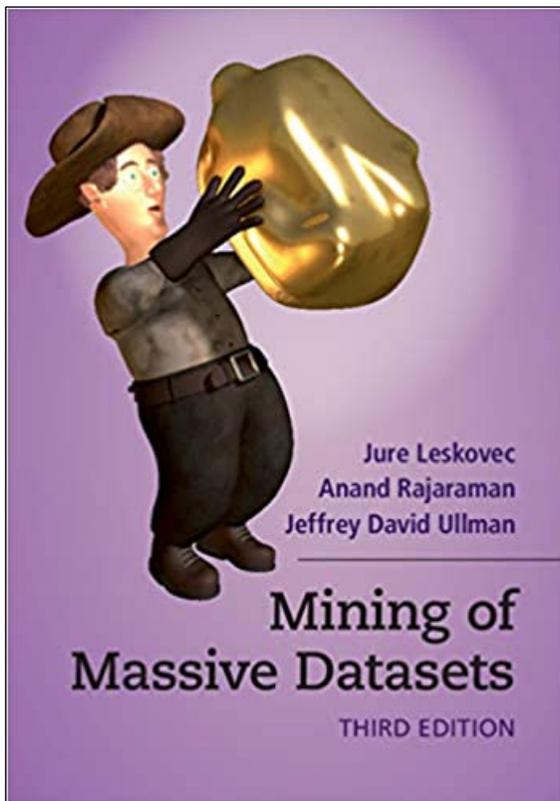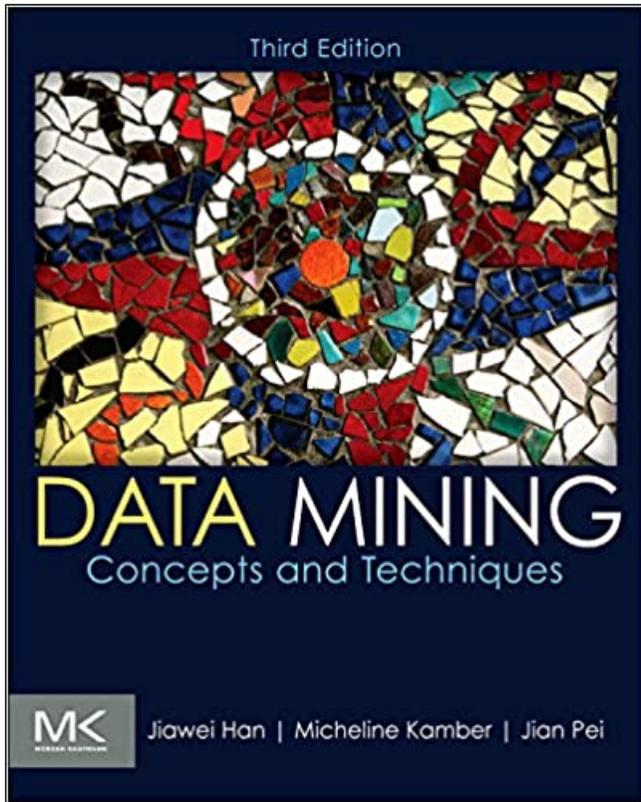
Leskovec, J. Rajaraman, A., Ullman, J. (2014). *Mining of Massive Datasets.*
Cambridge University Press.

By agreement with the publisher, you can download the book for free from this page
http://www.mmds.org/.

Other Materials and Resources

Spark Programming
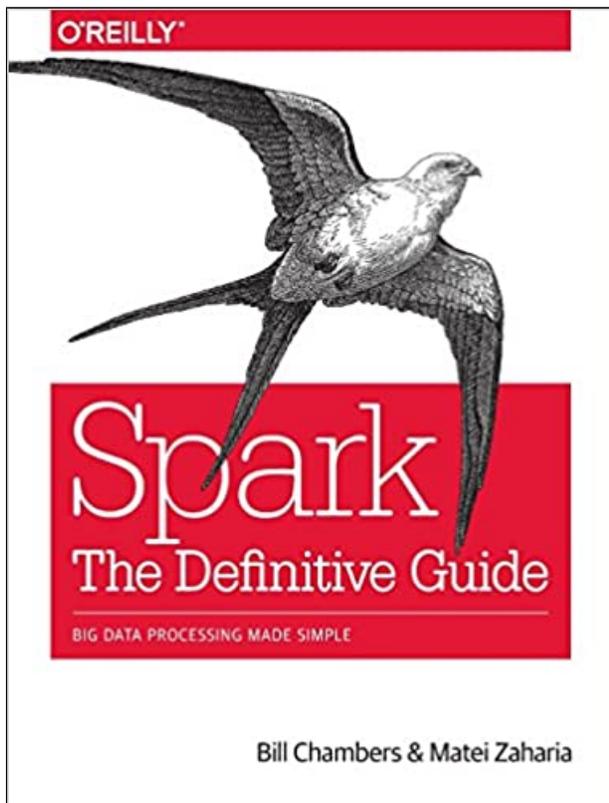
- Bill Chambers and Matei Zaharia (2018). *Spark: The Definitive Guide: Big Data Processing Made Simple*
O'Reilly Media Inc.
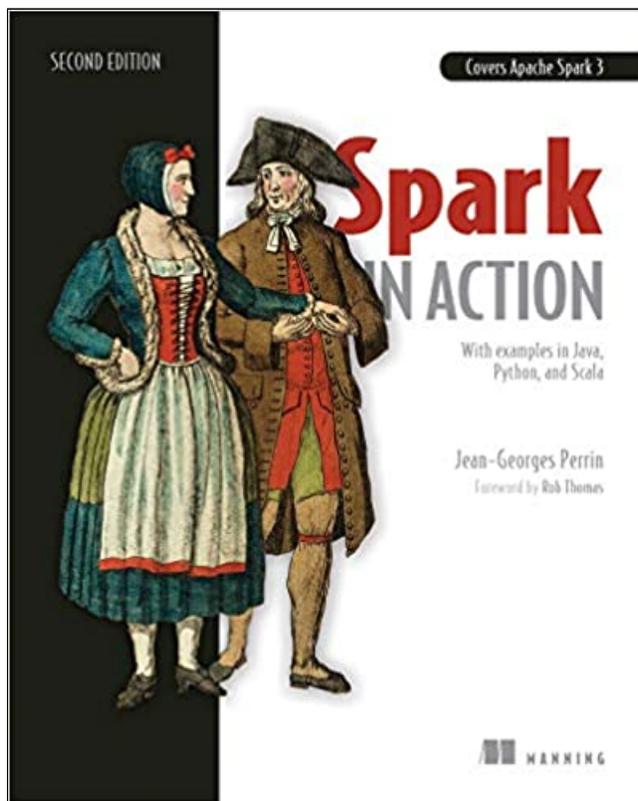
- Jean-Georges Perrin (2020). *Spark in Action, Second Edition: Covers Apache Spark 3 with Examples in Java, Python, and Scala*, 2nd ed.
O'Reilly Media Inc.

- Sandy Ryza, Uri Laserson, Sean Owen, and Josh Wills (2017). *Advanced Analytics with Spark: Patterns for Learning from Data at Scale*
O'Reilly Media Inc.
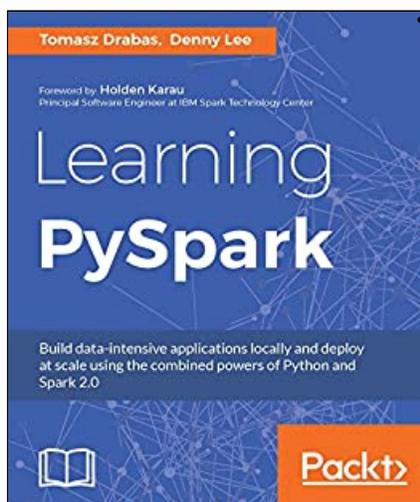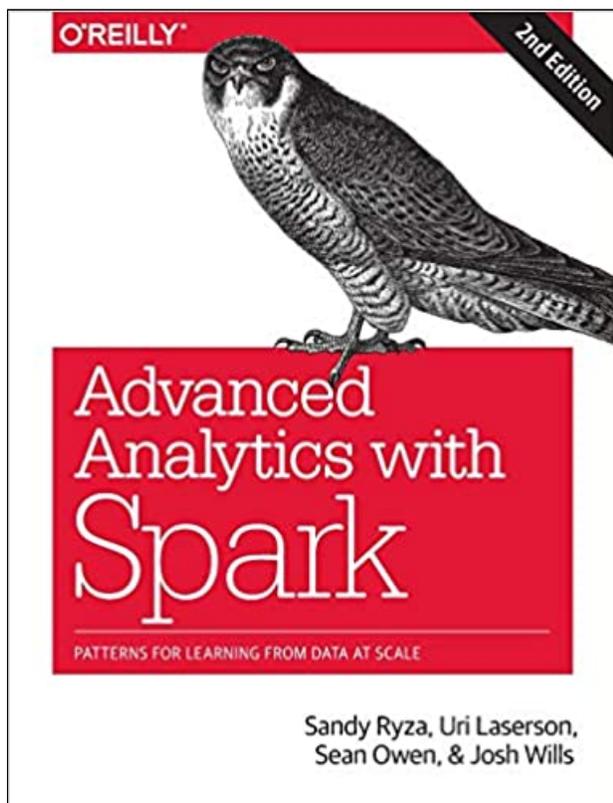
Tomasz Drabas, Denny Lee (2017). **Learning PySpark. Build data-intensive applications locally and deploy at scale using the combined powers of Python and Spark 2.0**

O'Reilly Media Inc.

Example pySpark Implementations available here:

https://github.com/drabastomek/learningPySpark

- Main Apache Spark documentation website: https://spark.apache.org/docs/latest/

GitHub

This course has **GitHub repository** for all of the course code examples, it can be found at: https://github.com/kiat/BigDataAnalytics

Usage of Cloud Machines

In this class, we use real-world cloud systems existing on Amazon AWS and Google Cloud. You will receive educational credit coupons or credited access to such cloud systems. You should never use your private account or use your credit card for this class assignment. You will receive enough education credits so you can run successful assignments on Google Cloud or Amazon AWS.

The credit amount is 100 USD for AWS and another 50 USD for Google Cloud. You should use only this amount to finish your assignments. This would be more than enough to finish the assignments, learn how AWS or Google Cloud work, and have your first enjoyable experience with it. You can choose different numbers of Machines, and different configurations of those machines. And each will cost you differently!

Pricing information is available at: http://aws.amazon.com/elasticmapreduce/pricing

Since this is real money, it makes sense to develop your code and run your jobs locally, on your laptop, using the small data set (we will provide two types of the same data set, small and big). Once things are working, you'll then move to Amazon AWS or Google Cloud. We will ask you to run your Spark jobs over the "real" data using a set of cluster machines.

As you can see on the Amazon AWS EC2 Price list, this costs around 50 cents per hour. That is not much, but **IT WILL ADD UP QUICKLY IF YOU FORGET TO SHUT OFF YOUR MACHINES.**

Be very careful and stop your machine as soon as you are done working!

You can always come back and start your machine or create a new one easily when you begin your work again. Another thing to be aware of is that Amazon charges you when you move data around. To avoid such charges, do everything in the "N. Virginia" region. That's where data is, and that's where you should put your data and machines.

Boston University Library Information

Boston University has created a set of videos to help orient you to the online resources at your disposal. An introduction to the series is below:

met_ode_library_14_sp1_00_intro video cannot be displayed here

All of the videos in the series are available on the Online Library Resources page, which is also accessible from the Campus Bookmarks section of your Online Campus Dashboard. Please feel free to make use of them.

As Boston University students, you have full access to the BU Library. From any computer, you can gain access to anything at the library that is electronically formatted. To connect to the library, use the link http://www.bu.edu/library. You may use the library's content whether you are connected through your online course or not, by confirming your status as a BU community member using your Kerberos password.

Once in the library system, you can use the links under "Resources" and "Collections" to find databases, eJournals, and eBooks, as well as search the library by subject. Some other useful links follow:

Go to Collections to access eBooks and eJournals directly.

If you have questions about library resources, go to Ask a Librarian to email the library or use the live-chat feature.

To locate course eReserves, go to Reserves.

Please note that you are not to post attachments of the required or other readings in the water cooler or other areas of the course, as it is an infringement on copyright laws and department policy. All students have access to the library system and will need to develop research skills that include how to find articles through library systems and databases.

Free Tutoring Service

Free online tutoring with Smarthinking is available to BU online students for the duration of their courses. The tutors do not rewrite assignments, but instead teach students how to improve their skills in the following areas: writing, math, sciences, business, ESL, and Word/Excel/PowerPoint.

You can log in directly to Smarthinking from Online Campus by using the link in the left-hand navigation menu of your course.

Smarthinking Tutoring Overview

YouTube

Please Note

Smarthinking may be used only for current Boston University online courses and career services. Use of this service for purposes other than current coursework or career services may result in deactivation of your Smarthinking account.

Study Guide

Module 1 Study Guide and Deliverables

Map Reduce Data Processing Pattern

Readings: Module 1 online content

Topics:
- Introduction to Big Data Analytics. What is Big Data? What are the challenges?
- Introduction to Apache Hadoop and MapReduce. Apache Spark.
- Spark programming. (Python and pySpark)
- Spark - Resilient Distributed Dataset (RDDs).

Assignments: Assignment 1 due Friday, March 26 at 6:00 AM ET

Assessments: Quiz 1 due Tuesday, March 23 at 6:00 AM ET

Live Classrooms:
- Tuesday, March 16 from 6:00-8:00 PM ET
- Friday, March 19 from 6:00-8:00 PM ET
- Monday, March 22 from 7:15-8:30 PM ET

Module 2 Study Guide and Deliverables

Large-Scale Data Processing and Storage

Topics:
- Spark - RDDs, DataFrames, Spark SQL
- PySpark + NumPy + SciPy, Code Optimization, Cluster Configurations
- Linear Algebra Computation in Large Scale.
- Distributed File Storage Systems

Readings: Module 2 online content

Assignments: Assignment 2 due Friday, April 2 at at 6:00 AM ET

Assessments: Quiz 2 due Tuesday, March 30 at at 6:00 AM ET

Live Classrooms:
- Tuesday, March 23 from 6:00-8:00 PM ET
- Monday, March 29 from 7:15-8:30 PM ET

Module 3 Study Guide and Deliverables

Introduction to Modeling and Optimization Basics

Topics:
- Introduction to modeling: numerical vs. probabilistic vs. Bayesian
- Introduction to Optimization Problems
- Batch and stochastic Gradient Descent
- Newton's Method
- Expectation Maximization,
- Markov Chain Monte Carlo (MCMC)

Readings: Module 3 online content

Assignments: Assignment 3 due Friday, April 9 at at 6:00 AM ET

Assessments: Quiz 3 due Tuesday, April 6 at at 6:00 AM ET

Live
- Tuesday, March 30 from 6:00-8:00 PM ET

Classrooms: • Monday, April 5 from 7:15-8:30 PM ET

Module 4 Study Guide and Deliverables

Supervised Learning on Large-Scale Data

Topics: • Introduction to supervised learning
                    • Generalized linear Models and Logistic
                      Regression
                    • Regularization
                    • Support Vector Machine (SVM) and the
                      kernel trick
                    • Outlier Detection
                    • Spark ML library

Readings: Module 4 online content

Assignments: Assignment 4 due Friday, April 16 at at 6:00 AM ET

Assessments: Quiz 4 due Tuesday, April 13 at 6:00 AM ET

Live   • Tuesday, April 6 from 6:00-8:00 PM ET
Classrooms: • Monday, April 12 from 7:15-8:30 PM ET

Module 5 Study Guide and Deliverables

Unsupervised Learning on Large-Scale Data

Topics: • Introduction to unsupervised learning
                    • K-means / K-medoids
                    • Gaussian Mixture Models
                    • Matrix factorization
                    • Dimensionality Reduction

Readings: Module 5 online content

Assignments: Assignment 5 due Friday, April 23 at at 6:00 AM
                    ET

Assessments: Quiz 5 due Tuesday, April 20 at at 6:00 AM ET

Live   • Tuesday, April 13 from 6:00-8:00 PM ET
Classrooms: • Monday, April 19 from 7:15-8:30 PM ET

Module 6 Study Guide and Deliverables

Text Mining

Topics: • Latent Semantic Indexing
                    • Topic models
                    • Latent Dirichlet Allocation
                    • Spark ML library for NLP

Readings:	Module 6 online content
Assignments:	Final Term Project due Tuesday, April 27 at 11:59 PM ET
Assessments:	None
Live Classrooms:	• Tuesday, April 20 from 6:00-8:00 PM ET • Monday, April 26 from 7:15-8:30 PM ET

Final Exam Details

The Final Exam is a proctored exam available from **Wednesday, April 28, at 6:00 AM ET to Saturday, May 1, at 11:59 PM ET**. The Computer Science department requires that all final exams be administered using an online proctoring service called Examity that you will access via your course in Blackboard. In order to take the exam, you are required to have a working webcam and computer that meets Examity's system requirements. A detailed list of those requirements can be found on the How to Schedule page. Additional information regarding your proctored exam will be forthcoming from the Assessment Administrator. You will be responsible for scheduling your own appointment within the defined exam window.

The Final Exam will be **open book/open notes** and is accessible only during the final exam period. You can access it from the Assessments section of the course. Your proctor will enter the password to start the exam.

Final Exam duration: **three hours**.

The exam features a combination of multiple choice, essay, and file response questions.

Grading Information

Grading Structure and Distribution

The grade for the course is determined by the following:

Overall Grading Percentages	
5 Homework Assignments	40%
5 Weekly Quizzes	20%
1 Term Project and Presentation	10%
Final Exam	30%

Assignments

Homework assignments are focused on applying theory learned in the week's module to a set of data and analyzing that data in PySpark. Weekly homework assignments will focus on implementation of data processing and machine learning algorithms in Apache Spark (PySpark). You will use **Amazon AWS** and **Google Cloud** to run your Spark code on large data sets. *Free of charge usage credits for Amazon and Google cloud will be provided through Education accounts.*

Due Time: at the end of each module (Please check the Study Guide or the Syllabus for the specific due date).

Where to submit: The "Assignments" section in the left-hand course menu.

Weekly Quizzes

Quizzes will evaluate students understanding of concepts presented in the corresponding week's module. Students should ensure adequate preparation before starting the quiz. It will not be possible to do well on the quiz without first reviewing the course material in depth and attempting to understand all examples and test yourself questions. It is recommended that you complete the quiz after you feel comfortable with the material and asked any questions that you may have had.

Due time: at the end of each module (Please check the Study Guide or Syllabus for the specific due date).

Where to complete: The "Assessments" section in the left-hand course menu.

Term Project and Presentation

At the end of this course you will work on your own Big Data project. You will work on a large data set, analyze and train machine learning algorithms. You will present your project in form of a 20 minutes online presentation. Clear project development guide lines will be provided in the course content in "Assignment" section.

Final Exam

There will be a proctored Final Exam in this course using a proctor service called Examity. Detailed instructions regarding your proctored exam will be forthcoming from the Assessment Administrator. You will be responsible for scheduling your own appointment.

Translation between letter grades and percentages.

A (Excellent)	95-100
A- (Excellent; minor improvement evident)	90-94.99
B+ (Very good)	87-89.99
B (Good)	83–86.99
B- (Good mostly some significant improvements needed)	80-82.99
C+ (Satisfactory; some significant improvements needed)	77-79.99
C (Satisfactory; significant improvements needed)	73–86.99
C- (Satisfactory; significant improvements required)	70-82.99

D Many improvements required	65
Fail	0

Lateness

We recognize that emergencies occur in professional and personal lives. If one occurs that prevents your completion of homework by a deadline, please make this plain to your facilitatorinstructor. This must be done in advance of the deadline (unless the emergency makes this impossible, of course), and should be accompanied by particulars that back it up. Additional documentation may be requested. Late submissions without reasons will result in grade deduction: we want to be fair to everyone in this process, including the vast majority of you who sacrifice so much to submit your homework on time in this demanding schedule.

Academic Conduct Policy

Please visit Metropolitan College's website for the full text of the department's *Academic Conduct Code*.

A Definition of Plagiarism

"The academic counterpart of the bank embezzler and of the manufacturer who mislabels products is the plagiarist: the student or scholar who leads readers to believe that what they are reading is the original work of the writer when it is not. If it could be assumed that the distinction between plagiarism and honest use of sources is perfectly clear in everyone's mind, there would be no need for the explanation that follows; merely the warning with which this definition concludes would be enough. But it is apparent that sometimes people of goodwill draw the suspicion of guilt upon themselves (and, indeed, are guilty) simply because they are not aware of the illegitimacy of certain kinds of "borrowing" and of the procedures for correct identification of materials other than those gained through independent research and reflection."

"The spectrum is a wide one. At one end there is a word-for-word copying of another's writing without enclosing the copied passage in quotation marks and identifying it in a footnote, both of which are necessary. (This includes, of course, the copying of all or any part of another student's paper.) It hardly seems possible that anyone of college age or more could do that without clear intent to deceive. At the other end there is the almost casual slipping in of a particularly apt term which one has come across in reading and which so aptly expresses one's opinion that one is tempted to make it personal property."

"Between these poles there are degrees and degrees, but they may be roughly placed in two groups. Close to outright and blatant deceit-but more the result, perhaps, of laziness than of bad intent-is the patching together of random jottings made in the course of reading, generally without careful identification of their source, and then woven into the text, so that the result is a mosaic of other people's ideas and words, the writer's sole contribution being the cement to hold the pieces together. Indicative of more effort and, for that reason, somewhat closer to honest, though still dishonest, is the paraphrase, and abbreviated (and often skillfully prepared) restatement of someone else's analysis or conclusion, without acknowledgment that another person's text has been the basis for the recapitulation."

The paragraphs above are from H. Martin and R. Ohmann, *The Logic and Rhetoric of Exposition, Revised Edition.* Copyright 1963, Holt, Rinehart and Winston.

Academic Conduct Code

I. **Philosophy of Discipline**

The objective of Boston University in enforcing academic rules is to promote a community atmosphere in which learning can best take place. Such an atmosphere can be maintained only so long as every student believes that his or her academic competence is being judged fairly and that he or she will not be put at a disadvantage because of someone else's dishonesty. Penalties should be carefully determined so as to be no more and no less than required to maintain the desired atmosphere. In defining violations of this code, the intent is to protect the integrity of the educational process.

II. **Academic Misconduct**

Academic misconduct is conduct by which a student misrepresents his or her academic accomplishments, or impedes other students' opportunities of being judged fairly for their academic work. Knowingly allowing others to represent your work as their own is as serious an offense as submitting another's work as your own.

III. **Violations of this Code**

Violations of this code comprise attempts to be dishonest or deceptive in the performance of academic work in or out of the classroom, alterations of academic records, alterations of official data on paper or electronic resumes, or unauthorized collaboration with another student or students. Violations include, but are not limited to:

A. **Cheating on examination**. Any attempt by a student to alter his or her performance on an examination in violation of that examination's stated or commonly understood ground rules.

B. **Plagiarism.** Representing the work of another as one's own. Plagiarism includes but is not limited to the following: copying the answers of another student on an examination, copying or restating the work or ideas of another person or persons in any oral or written work (printed or electronic) without citing the appropriate source, and collaborating with someone else in an academic endeavor without acknowledging his or her contribution. Plagiarism can consist of acts of commission-appropriating the words or ideas of another-or omission failing to acknowledge/document/credit the source or creator of words or ideas (see below for a detailed definition of plagiarism). It also includes colluding with someone else in an academic endeavor without acknowledging his or her contribution, using audio or video footage that comes from another source (including work done by another student) without permission and acknowledgement of that source.

C. **Misrepresentation or falsification of data** presented for surveys, experiments, reports, etc., which includes but is not limited to: citing authors that do not exist; citing interviews that never took place, or field work that was not completed.

D. **Theft of an examination**. Stealing or otherwise discovering and/or making known to others the contents of an examination that has not yet been administered.

E. **Unauthorized communication during examinations**. Any unauthorized communication may be considered prima facie evidence of cheating.

F. **Knowingly allowing another student to represent your work as his or her own**. This includes providing a copy of your paper or laboratory report to another student without the explicit permission of the instructor(s).

G. **Forgery, alteration, or knowing misuse of graded examinations, quizzes, grade lists, or official records of documents**, including but not limited to transcripts from any institution, letters of recommendation, degree certificates, examinations, quizzes, or other work after submission.

H. **Theft or destruction of examinations or papers** after submission.

I. **Submitting the same work in more than one course** without the consent of instructors.

J. **Altering or destroying another student's work or records**, altering records of any kind, removing materials from libraries or offices without consent, or in any way interfering with the work of others so as to impede their academic performance.

K. **Violation of the rules governing teamwork**. Unless the instructor of a course otherwise specifically provides instructions to the contrary, the following rules apply to teamwork: 1. No team member shall intentionally restrict or inhibit another team member's access to team meetings, team work-in-progress, or other team activities without the express authorization of the instructor. 2. All team members shall be held responsible for the content of all teamwork submitted for evaluation as if each team member had individually submitted the entire work product of their team as their own work.

L. **Failure to sit in a specifically assigned seat during examinations.**

M. **Conduct in a professional field assignment that violates the policies and regulations of the host school or agency.**

N. **Conduct in violation of public law occurring outside the University that directly affects the academic and professional status of the student, after civil authorities have imposed sanctions.**

O. **Attempting improperly to influence the award of any credit, grade, or honor.**

P. **Intentionally making false statements to the Academic Conduct Committee or intentionally presenting false information to the Committee.**

Q. **Failure to comply with the sanctions imposed under the authority of this code.**

Important Message on Final Exams

Dear Boston University Computer Science Online Student,

As part of our ongoing efforts to maintain the high academic standard of all Boston University programs, including our online MSCIS degree program, the Computer Science Department at Boston University's Metropolitan College requires that each of the online courses includes a proctored final examination.

By requiring proctored finals, we are ensuring the excellence and fairness of our program. The final exam is administered online.

Specific information regarding final-exam scheduling will be provided approximately two weeks into the course. This early notification is being given so that you will have enough time to plan for where you will take the final exam.

I know that you recognize the value of your Boston University degree and that you will support the efforts of the University to maintain the highest standards in our online degree program.

Thank you very much for your support with this important issue.

Regards,

Professor Lou Chitkushev, Ph.D.
Associate Dean for Academic Affairs
Boston University Metropolitan College

Who's Who: Roles and Responsibilities

You will meet many BU people in this course and program. Some of these people you will meet online, and some you will communicate with by email and telephone. There are many people behind the scenes, too, including instructional designers, faculty who assist with course preparation, and video and animation specialists.

People in Your Online Course in Addition to Your Fellow Students

Your Facilitator. Our classes are divided into small groups, and each group has its own facilitator. We carefully select and train our facilitators for their expertise in the subject matter and their excellence in teaching. Your facilitator is responsible for stimulating discussions in pedagogically useful areas, for answering your questions, and for grading homework assignments, discussions, term projects, and any manually graded quiz or final-exam questions. If you ask your facilitator a question by email, you should get a response within 24 hours, and usually faster. If you need a question answered urgently, post your question to one of the urgent help topics, where everyone can see it and answer it.

Your Professor. The professor for your course has primary responsibility for the course. If you have any questions that your facilitator doesn't answer quickly and to your satisfaction, then send your professor an email in the course, with a cc to your facilitator so that your facilitator is aware of your question and your professor's response.

Your Lead Faculty and Student Support Administrator, Jennifer Sullivan. Jen is here to ensure you have a positive online experience. You will receive emails and announcements from Jen throughout the semester. Jen represents Boston University's university services and works for the

Office of Distance Education. She prepares students for milestones such as course launch, final exams, and course evaluations. She is a resource to both students and faculty. For example, Jen can direct your university questions and concerns to the appropriate party. She also handles general questions regarding Online Campus functionality for students, faculty, and facilitators, but she does not provide tech support. She is enrolled in all classes and can be contacted within the course through Online Campus email as it is running. You can also contact her by external email at jensul@bu.edu or call (617) 358-1978.

People Not in Your Online Course

Although you will not normally encounter the following people in your online course, they are central to the program. You may receive emails or phone calls from them, and you should feel free to contact them.

Your Computer Science Department Online Program Coordinator, Peter Mirza. Peter administers the academic aspects of the program, including admissions and registration. You can ask him questions about the program, registration, course offerings, graduation, or any other program-related topic. He can be reached at metcsol@bu.edu or (617) 353-2566.

Your Computer Science Department Program Manager, Kim Richards. Kim is responsible for administering most aspects of the Computer Science Department. You can reach Kim at kimrich@bu.edu or (617) 353-2566.

Andrew Gorlin, Academic Advisor. Reviews requests for transfer credits and waivers. Advises students on which courses to take to meet their career goals .You can reach Andrew at asgorlin@bu.edu, or (617)-353-2566.

Professor Anatoly Temkin, Computer Science Department Chairman. You can reach Professor Temkin at temkin@bu.edu or at 617-353-2566.

Professor Lou T. Chitkushev, Associate Dean for Academic Affairs, Metropolitan College. Dr. Chitkushev is responsible for the academic programs of Metropolitan College. Contact Professor Chitkushev with any issues that you feel have not been addressed adequately. The customary issue-escalation sequence after your course facilitator and course faculty is Professor Temkin, and then Professor Chitkushev.

Professor Tanya Zlateva, Metropolitan College Dean Dr. Zlateva is responsible for the quality of all the academic programs at Boston University Metropolitan College.

Disability Services

In accordance with University policy, every effort will be made to accommodate the unique and special needs of students with respect to speech, hearing, vision, or other disabilities. Any student who feels they may need an accommodation for a documented disability should contact Disability & Access Services at 617-353-3658 or at access@bu.edu for review and approval of accommodation requests.

Netiquette

The Office of Distance Education has produced a netiquette guide to help you understand the potential impact of your communication style.

Before posting to any discussion forum, sending an email, or participating in any course or public area, please consider the following:

Ask Yourself…

- How would I say this in a face-to-face classroom or if writing for a newspaper, public blog, or wiki?
- How would I feel if I were the reader?
- How might my comment impact others?
- Am I being respectful?
- Is this the appropriate area or forum to post what I have to say?

Writing

When you are writing, please follow these rules:

- **Stay polite and positive in your communications.** You can and should disagree and participate in discussions with vigor; however, when able, be constructive with your comments.
- **Proofread your comments before you post them.** Remember that your comments are permanent.
- **Pay attention to your tone.** Without the benefit of facial expressions and body language, your intended tone or the meaning of the message can be misconstrued.
- **Be thoughtful and remember that classmates' experience levels may vary.** You may want to include background information that is not obvious to all readers.
- **Stay on message.** When adding to existing messages, try to maintain the theme of the comments previously posted. If you want to change the topic, simply start another thread rather than disrupt the current conversation.
- **When appropriate, cite sources.** When referencing the work or opinions of others, make sure to use correct citations.

Reading

When you are reading your peers' communication, consider the following:

- **Respect people's privacy.** Don't assume that information shared with you is public. Your peers may not want personal information shared. Please check with them before sharing their information.
- **Be forgiving of other students' and instructors' mistakes.** There are many reasons for typos and misinterpretations. Be gracious and forgive other's mistakes or point them out privately and politely.
- **If a comment upsets or offends you, reread it and/or take some time before responding.**

Important Note

Don't hesitate to let your instructor or your faculty and student support administrator know if you feel others are inappropriately commenting in any forum.

All Boston University students are required to follow academic and behavioral conduct codes. Failure to comply with these conduct codes may result in disciplinary action.

Registration Information and Important Dates

View the drop dates for your course.

Withdraw or drop your course.

- If you are dropping down to zero credits for a semester, please contact your college or academic department.
- **Nonparticipation in your online course does not constitute a withdrawal from the class.**
- If you are unable to drop yourself on Student Link, please contact your college or academic department.

Technical Support

Experiencing Issues with BU Websites or Blackboard?

It may be a system-wide problem. Check the BU Information Services & Technology (IS&T) news page for announcements.

Boston University technical support is available via email (ithelp@bu.edu), the support form, and phone (617-353-4357). Please note that the IT Help Center has multiple locations. All locations can be reached through the previously mentioned methods. For IT Help Center hours of operation, please visit their contact page. For other times, you may still submit a support request via email, phone, or the support form, but your question won't receive a response until the following day. If you aren't calling, it is highly recommended that you submit your support request via the technical-support form, as this provides the IS&T Help Center with the best information in order to resolve your issue as quickly as possible.

Examples of issues you might want to request support for include the following:

- Problems viewing or listening to sound or video files
- Problems accessing internal messages
- Problems viewing or posting comments
- Problems attaching or uploading files for assignments or discussions
- Problems accessing or submitting an assessment

To ensure the fastest possible response, please fill out the online form using the link below:

IT Help Center Support
617-353-4357 or Web

Check your open tickets using BU's ticketing system.

Navigating Courses

For best results when navigating courses, it is recommended that you use the Mozilla Firefox browser.

The Table of Contents may contain folders. These folders open and close (+ and − signs) and may conceal some pages. To avoid missing content pages, you are advised to use the next- and previous-page buttons (and icons) in the top-right corner of the learning content.

Please also familiarize yourself with the navigation tools, as shown below; these allow you to show and hide both the Course Menu and the Table of Contents on the left. This will be helpful for freeing up screen space when moving through the weekly lecture materials.

Navigation tools for the Table of Contents are shown in the image below:

Clicking the space between the Course Menu and the Table of Contents allows you to show or hide the Course Menu on the left:
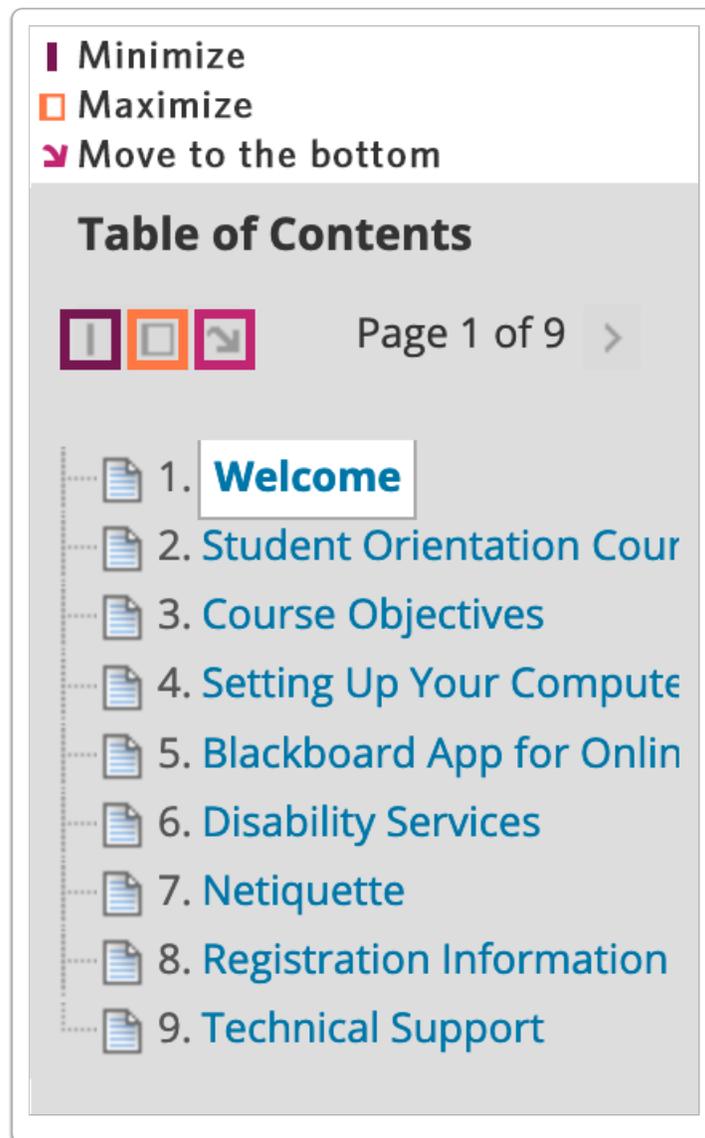
Web Resources/Browser Plug-Ins

To view certain media elements in this course, you will need to have several browser plug-in applications installed on your computer. See the Course Resources page in the Syllabus of each individual course for other specific software requirements.

- Check your computer's compatibility by reviewing Blackboard's System Requirements
- Check your browser settings with Blackboard's Connection Test

How to Clear Your Browser Cache

The IT Help Center recommends that you periodically clear your browser cache to ensure that you are viewing the most current content, particularly after course or system updates.

This page is also found within the "How to…" section of the online documentation, which contains a list of some of the most common tasks in Blackboard Learn.

Boston University Metropolitan College