BOSTON UNIVERSITY

Applied Business Analytics
Graduate Program

Admissions Advisor: Laura Boyle

Faculty Panelists: Greg Page
Dr. Hyunuk Kim

Program Alumni: Haotian Gu ‘22

ABA Student: Xiaotong “Claire” Ding

We will begin momentarily…

Boston University Metropolitan College

Session Agenda

- Introductions
- Boston University Metropolitan College
- Program Options & Structure
- Curriculum
- Career Opportunities
- How to Prepare
- Contact Information

Greg Page

Classes taught
- AD 699 – Data Mining for Business Analytics
- AD 654 – Marketing Analytics
- ADR 100 – Introduction to R

Research interests
- Data modeling
- Data exploration techniques

Bio
- MBA, Massachusetts Institute of Technology, 2014
- BA, Stanford University, 2002
- Active Duty US Naval Intelligence
- 5 years United States Army Reserve
- 12 years Iraq & Afghanistan Veteran

Dr. Hyunuk Kim

Classes taught

- AD 571 – Business Analytics Foundations
- AD 616 – Enterprise Risk Analytics
- AD 699 – Data Mining for Business Analytics

Research interests

- Computational social science
- Scientific, technological, and cultural innovations
- (mis)information on social media

Bio

- PhD, MS, BS, Pohang University of Science and Technology
- Postdoctoral Associate, Questrom School of Business, Boston University
- Predoctoral Fellow, Kellogg School of Management, Northwestern University

#42 Among Best U.S. Colleges (WSJ/*Times Higher Education*)

1 of only 3 universities in MA named to the Assoc of American Universities

#42 Best National Universities (2021 *U.S. News & World Report*)

FACULTY: Distinguished and internationally renowned

STUDENTS: Diverse community of engaged, mature students

RESOURCES: Interactive technology, group study, support forums

HISTORY: Over 140 years of pioneering research and academic innovation

Metropolitan College (BU MET)

- A mission to broaden the reach of BU to help busy adults achieve their personal and professional ambitions
- Largest & most diverse enrollment of graduate students of 17 schools & colleges @ BU
- **Practical career-focused** coursework
- **Flexible** curriculum & pace of program completion (***not*** a cohort/lock-step model)
- Research-based faculty & industry professionals teaching *both* on-campus and online
- 20 years of dedicated *Online Education*

Program Structure

- Flexible to fit your schedule
- On-Campus & Online options, with ability to interchange
- Part-Time or Full-Time study, with ability to alternate
- Evening On-Campus coursework and Live classrooms
- Year-round courses (*Fall, Spring, & Summer semesters*)

On-Campus Programs

- **Part-time students take 1-2 courses / 14-week semester**
- **Full-time students take 3-4 courses / 14-week semester**
- Most courses meet ONE evening each week (6-9 PM), Monday-Thursday
- On-campus courses offered in four semesters:

  Fall (September)
  Spring (January)
  *Summer 1 (May)**
  *Summer 2 (July)**

* *Summer sessions are 6-week terms meeting twice per week*

Online Programs

- Recommended **part-time** taking 1 course / **7-week session***
  (up to 2 courses/semester, up to 6/year)
- 6 sessions per year*:

  Fall 1 (September)
  Fall 2 (November)
  Spring 1 (January)
  Spring 2 (March)
  Summer 1 (May)
  Summer 2 (July)

- Courses are **asynchronous**
- **Live Classroom** option each week
- All courses **taught by faculty**, with **15:1** student/facilitator ratio
- Online lectures, videos, interactive animations & simulations, discussion boards, electronic portfolios, web conferencing, etc.

BOSTON UNIVERSITY

BU MET Applied Business Analytics

BU MET's online MS in ABA program **ranks #1 among the Best Online Masters in Business Analytics and Intelligence Programs** by *Online Masters Report 2021* and is recognized as **Best in Leadership Development**

BU MET's online MS in ABA program **ranks #5 among the Best Online Master's in Business Analytics** by *Intelligent Report 2021* and is recognized as **the Leading Business Analytics Program on the East Coast**

BU Metropolitan College

Program Emphasis

Applied Business Analytics (ABA)

- Knowledge and skills necessary to better utilize available information in operational, tactical, and strategic decision-making in organizations.
- Experience with various powerful emerging technologies and techniques for increasing the value of both in-house and third-party data sets.
- An understanding of how organizations are using interlinked data-inputs, analytics models, and decision-support tools to better understand their operations, customers, and markets.
- Expertise in web analytics and metrics, and the ability to procure and process unstructured text, and delve into hidden patterns within data sets.
- The ability to facilitate knowledge discovery using data-mining and visualization techniques over vast amounts of data.

Data-Driven Decision Making

Applied Business Analytics (ABA)

Impacts of applying business analytics

- Reduced costs, better risk management, faster decision-making, better productivity, enhanced profitability and customer satisfaction

- The traditional management approaches are evolving in today's analytics-driven environment to include:
  - more fact-based decisions as opposed to subjective judgment and intuition
  - more prediction rather than reactive decisions
  - use of analytics by everyone at the point where decisions are made rather than relying on skilled experts in a consulting group

Challenges in developing analytics capabilities

- Lack of understanding how to use analytics
- Competing business priorities
- Insufficient analytical skills
- Difficulty in getting good data and sharing information
- Not understanding the benefits versus perceived costs of analytics studies

Program Structure

MS in Applied Business Analytics

BU MET MS in ABA

= 40 credits =

4 core courses
4 specialization courses
2 elective courses

Core Courses (4 courses/16 credits)

AD 571 Business Analytics Foundations

(prerequisite for all specialization courses)

AD 605 Operations Management

AD 632 Financial Concepts

AD 715 Quantitative and Qualitative Decision Making

Specialization Courses (4 courses/16 credits)

AD 616 Enterprise Risk Analytics

AD 654 Marketing Analytics

AD 688 Web Analytics for Business

AD 699 Data Mining for Business Analytics

Elective Courses (2 courses/8 credits)

Program Structure

Graduate Certificate in Applied Business Analytics

BU MET Graduate Certificate in ABA = 16 credits =

AD 571 (4 credits)
plus
select three from the four specialization courses

Specialization Courses (4 courses/16 credits)

- **AD 616** Enterprise Risk Analytics
- **AD 654** Marketing Analytics
- **AD 688** Web Analytics for Business
- **AD 699** Data Mining for Business Analytics

Length of the Programs

Applied Business Analytics (ABA)

ON CAMPUS

Applied Business Analytics

Graduate Certificate in ABA (16 credits)	8 Months
MS in ABA (40 credits)	12 to 16 Months

ONLINE

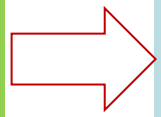
Applied Business Analytics

Graduate Certificate in ABA (16 credits)	8 Months
MS in ABA (40 credits)	20 Months

Laboratories

Applied Business Analytics (ABA)

Introductory Level Labs:
- → AD100 Pre-Analytics
- → ADR100 Introduction to R
- → PY100 Introduction to Python



Advanced Level Labs:
- → AD200 BA Tools & Applications
- → ADR200 BA with R
- → PY200 BA with Python

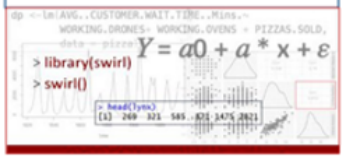
- All ABA non-credit, hands-on laboratories are offered in an online self-paced delivery format in Fall & Spring. Every Summer, the intro-level labs AD100 and ADRR100 are offered in instructor-led delivery format.
- All ABA labs are free for all new and current ABA students.
- Within the labs, knowledge areas are structured in units and modules
- Exercises, self-administered tests, discussion forums, links to instructional videos narrated by course developers, and recorded unit-based classroom sessions are offered for each unit and module.
- The labs are graded on a pass/fail basis and require a grade of 60% or better on each unit. The successful completion of each lab is certified with a badge.
- After the completion of the instruction period, students with badges will continue to have full access to the lab' interactive working environment to review or deepen their knowledge and skills.

Laboratories

Applied Business Analytics (ABA)

Pre-Analytics Laboratory
AD 100 (0 cr.)

Introduction to R for Business
ADR100 (0 cr.)



Needed for

Core Course

AD 571 Business Analytics Foundations

Prerequisite for

Specialization Courses

- **AD 616 Enterprise Risk Analytics**
- **AD 654 Marketing Analytics**
- **AD 688 Web Analytics for Managers**
- **AD 699 Data Mining for Business Analytics**

Business Analytics Tools & Applications AD200

Business Analytics with R ADR200

Selected Units are Needed for

Introduction to Python for Business PY100

Needed for

Recommended Elective Course:

AD599 Introduction to Python & SQL for Business Analytics

ABA Core Course: Business Analytics Foundations

AD571 Course Outline

MODULE 1

Lecture 1:
Introduction to Business Analytics Foundations

Lecture 2:
Business Analytics Problem Framing and Methodology Selection

MODULE 2

Lecture 3:
Data Modeling in Power BI

Lecture 4:
Data Modeling with MS SQL Server 2020, Power BI, and R

MODULE 3

Lecture 5:
Descriptive Business Analytics: Basic Concepts and Applications

Lecture 6:
Model Building for Selected Descriptive Business Analytics

MODULE 4

Lecture 7:
Predictive Business Analytics: Basic Concepts and Applications

Lecture 8:
Model Building for Selected Predictive Business Analytics

MODULE 5

Lecture 9:
Prescriptive Business Analytics: Basic Concepts and Applications

Lecture 10:
Model Building for Selected Prescriptive Business Analytics

MODULE 6

Lecture 11:
Business Analytics Models Deployment and Models Lifecycle Management

Lecture 12:
Applied Business Analytics for Business Practitioners

ABA Core Course: Business Analytics Foundations

AD571 TARGETED OUTCOMES

1. Ability to use tools and interpret output professionally
2. Apply methodologies to new problems in the field
3. Activation of data and data sources for analysis
4. Enhanced leadership and decision-making capacity
5. Ability to pre-process and elicit value from data
6. Navigation of analytics methodologies
7. Storytelling and problem-framing skills with BI tools
8. Preparation for cross-industry scenarios
9. Understand and apply various data and analytics models
10. Ability to contribute value in the analytics team setting
11. Understand technology ecosystem and career options
12. Preparation for specialization courses

Software Environments and Applications in:

Microsoft Advanced Excel

Microsoft Power BI

R Studio & R-Statistics

ABA Specialization Courses

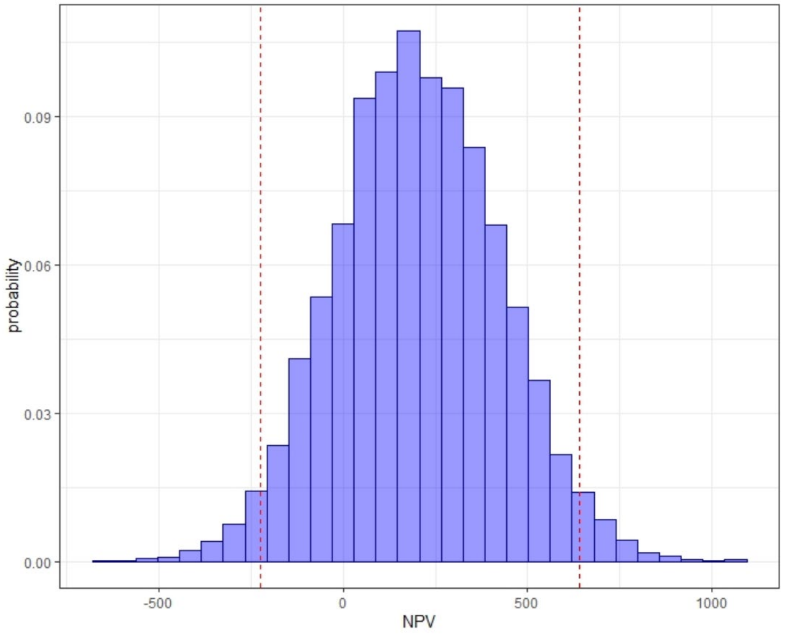
Enterprise Risk Analytics

Learning Outcomes

- Learn to model Risk and uncertainty
- Develop a comprehensive skillset of stochastic modeling
- Monte-Carlo simulation and Decision making
- Decision making under uncertainties

Business Skills

- Turn qualitative discussions into math models and back your decisions with numbers
- Speak the language of Quantitative Risk not just within Financial Industry
- Work with Case studies across Healthcare, Finance, Manufacturing

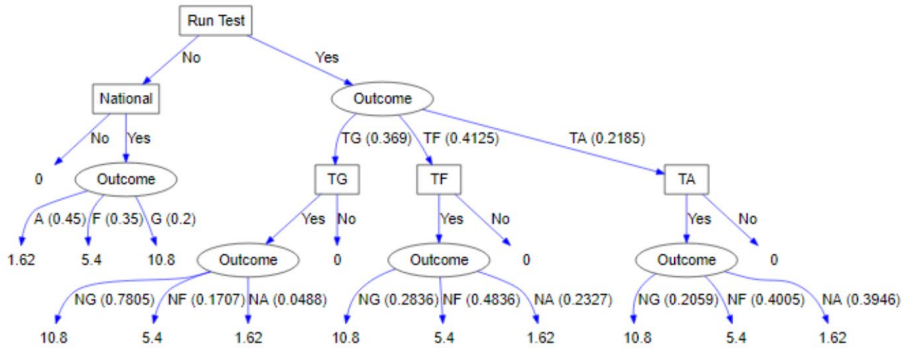


ABA Specialization Courses

Enterprise Risk Analytics

Technical Skills

- Modeling of Inputs with Stochastic Distributions
- Monte Carlo Simulations and parameter estimation
- Decision Trees and Analysis of Optimal decisions under uncertainty
- Advanced R Techniques for Modeling Business Decisions
- Visualizing Uncertainty and Risk in R
- Advanced Optimization tools in R

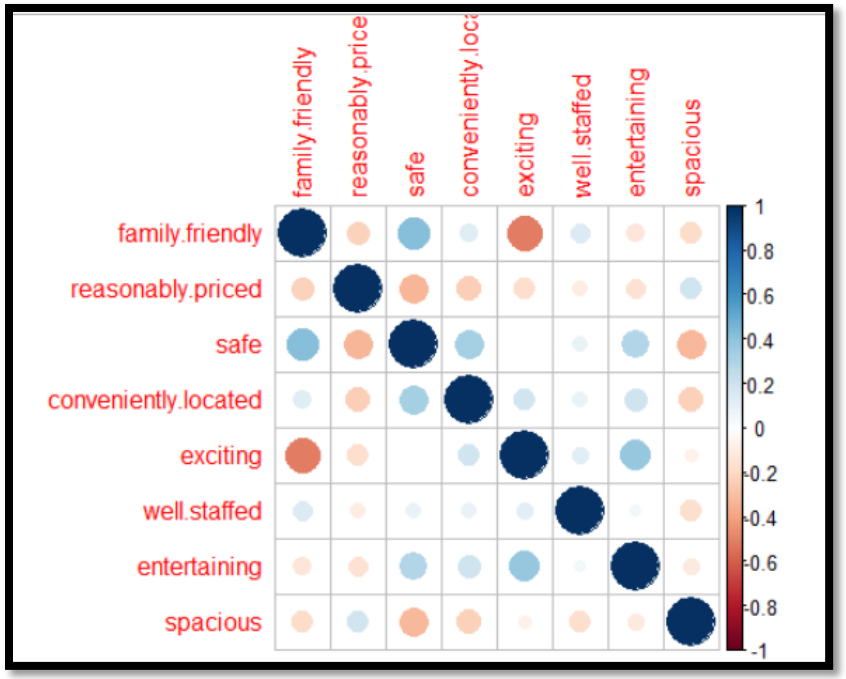


ABA Specialization Courses

Marketing Analytics

Learning Outcomes

- Learn to assess companies' internal data about sales and operations, as well as external data about the competitive environment
- Develop a sense of when certain types of models are most appropriate for solving particular challenges



Business Skills

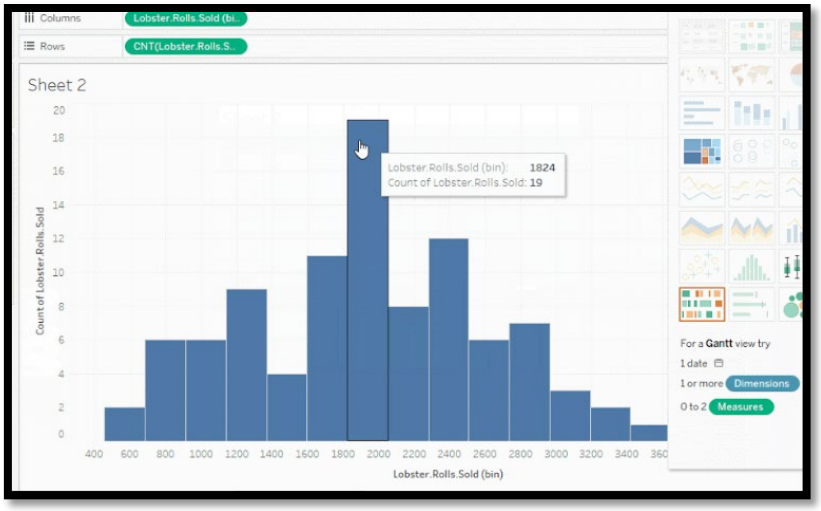
- Present findings regarding common business analytics processes ranging from market sizing to linear modeling
- Handle a mix of real-world case data with simulated data from the business running case, Lobster Land (a fictional theme park set in Maine)

ABA Specialization Courses

Marketing Analytics

Technical Skills

- Modeling and data visualization in R using the ggplot package
- Data visualization and dashboard creation using Tableau Public
- Conjoint analysis in R
- Inferential statistics in R
- Linear modeling in R
- Building and assessing classification models in R



ABA Specialization Courses

Web Analytics for Business

Learning Outcomes

- Learn to model and organize Data using SQL Database
- Understand how Websites capture data, clickstream data and query it
- Use Off-the-shelf analytical tools like Google Analytics, Facebook Pixel for high impact
- Kick start a Business Idea using a website and iterate it using real click data

Business Skills

- Understand customer segmentation, User Experience using real data for your own website
- Use Social Media like Twitter, Email campaigns, Facebook to generate user following for your business idea

Technical Skills

- Learn SQL Skills extensively by querying and creating databases on the cloud and locally on your machine
- Connect SQL with R to run analytics
- Learn to use APIs for Twitter using R and get location analytics
- Text processing and Text mining the web
- Web Scraping using Scraping tools
- Extensive exposure to Google Analytics

BU Metropolitan College

Google Analytics

Hootsuite™

ABA Specialization Courses

Web Analytics for Business

Applied Skills

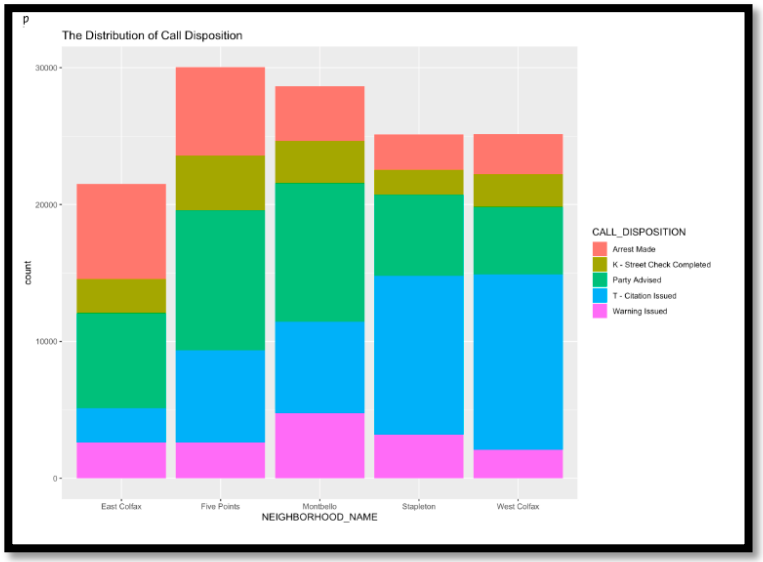
- ✓ Data Organization and Modeling
- ✓ SQL Deep Dive
- ✓ Web Architecture and Scraping
- ✓ Text Analytics
- ✓ Social Networks Analysis
- ✓ Graph Analytics

ABA Specialization Courses

Data Mining for Business Analytics

Learning Outcomes

- Learn to build, assess, and iterate on machine learning models, using several different algorithms
- Understand the 'data wrangling' process, including the impact that particular decisions made by a data modeler will impact outcomes



Business Skills

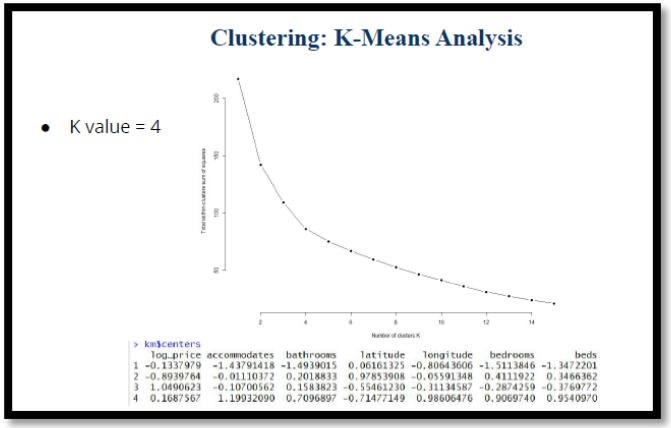
- Practical, real-world demonstrations of applications of popular data mining processes, including clustering, association rules, linear regression, and others.
- The value of communicating results in a way that is clear to the audience

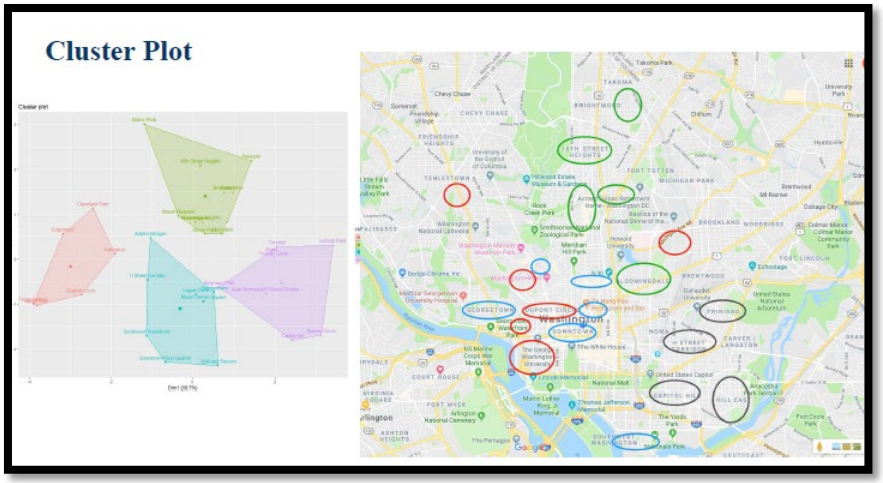
ABA Specialization Courses

Data Mining for Business Analytics

Technical Skills

- Learn to interpret and manipulate several types of data using R and RStudio.
- Gain a sense of how a model's hyperparameters can be adjusted in R, along with the impact of those adjustments on model results.
- Extensive exposure to the ggplot package in R, through which students create and interpret many types of data visualizations





Career Opportunities

Career Opportunities

Business Analytics: Common Qualifications

- R
- Python
- SQL/Azure
- Other statistical software such as SAS, STATA, SPSS, or MATLAB
- Visualizations in Power BI, Tableau, Qlik, Domo
- Knowledge of statistics, including:
  - Probability
  - Common statistical distributions
  - Data Visualization (Generation & Interpretation)
  - Data Summary (Generation & Interpretation)
  - Algorithms for Data Analytics

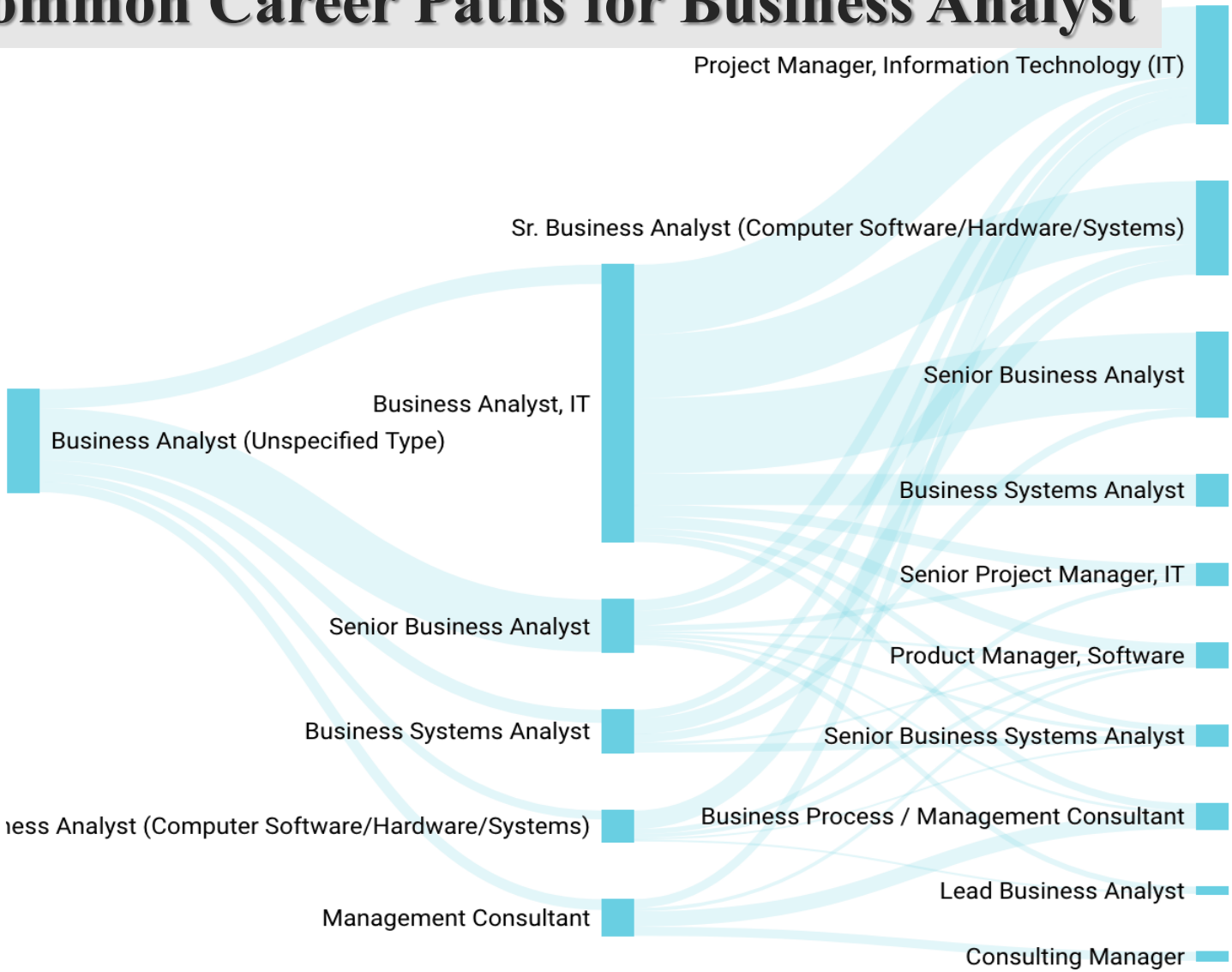
Career Opportunities

Common Career Paths for ABA Graduates

- Data Analyst
- Business Analyst
- Business Intelligence Analyst
- Data Scientist
- Data Steward
- Financial Analyst
- Credit Risk Analyst

Career Opportunities

Common Career Paths for Business Analyst



Reference: https://www.payscale.com/

Career Opportunities

Career Resources

BU's Center for Career Development (CCD)

- Handshake: connect with employers, find jobs, access career resources
  - Vmock, Big Interview, GoinGlobal, Vault
- On campus events: career fairs & employer info sessions
- Smarthinking: additional resources for online students

Connect with BU Alumni

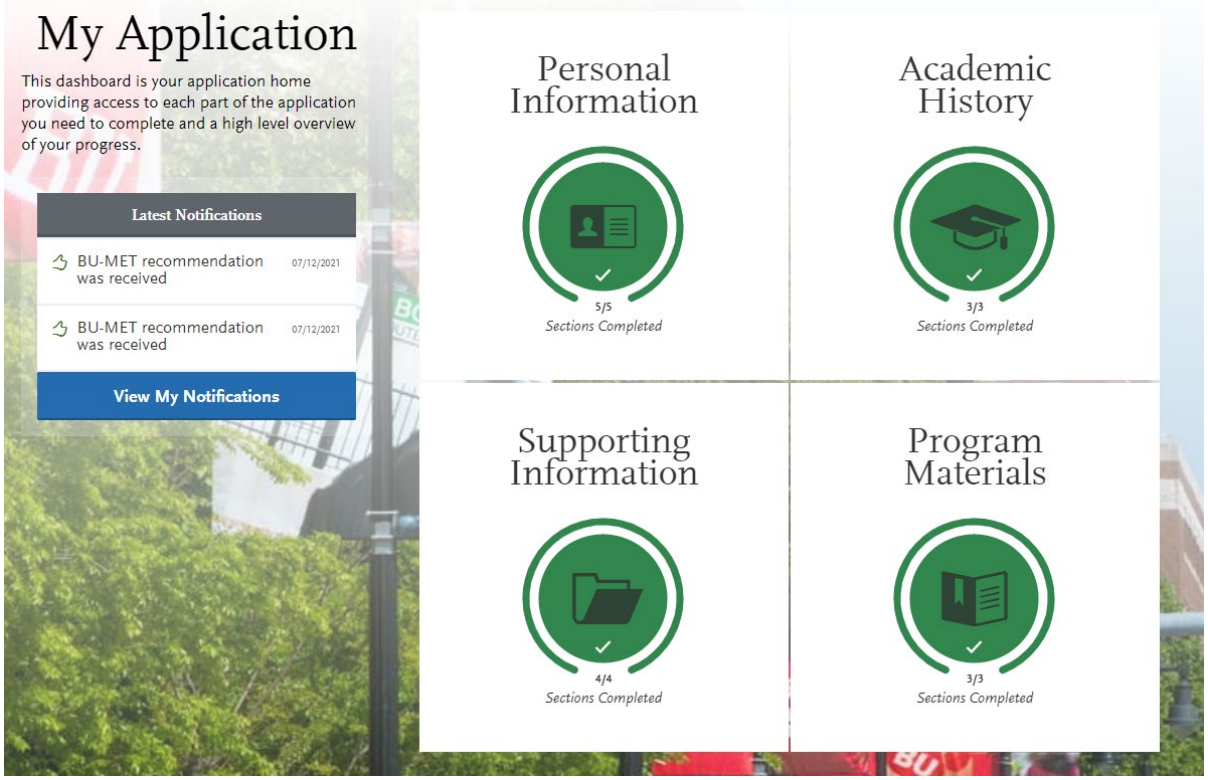
- Career Advisory Network
- BUAA LinkedIn Group

How to Prepare

Graduate Admission Process

- www.bu.edu/met/apply-now
- **Rolling admission. Decision within 1-3 weeks**
- Recommend applying *at least* 1 month before start term

  (2-3 months for international students)



Transcripts

- Transcripts from all colleges and universities attended*

**Transcripts must be in English. Unofficial & in-progress transcripts are acceptable for the admissions review process. Official transcripts are required upon enrollment.*

Professional Portfolio

- Current Resume
- Personal Statement
- Two letters of recommendation**

***It is required that one letter of recommendation be an academic reference if you graduated in the past three years.*

Test Scores

- GRE/GMAT ***not required***
- TOEFL, IELTS, or Duolingo requirement for international students***

****Students eligible for an automatic waiver if English is your primary language or if you have a degree from an institution in which the language of instruction was English*

Stay social with @BUMET

Thank you for attending today's webinar!

For next steps, please contact:

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