BIG DATA.

BIGGER OPPORTUNITY.

Data Analysis
Optimization
Risk
Data Warehousing
Network Analysis
Data Mining
Social Media
Business Intelligence
Big Data
Web Analytics

SQL R SAS Python Hadoop MapReduce Pig Hive NoSQL

Master of Science

Business Intelligence & Analytics

STEVENS
INSTITUTE of TECHNOLOGY
THE INNOVATION UNIVERSITY®

School of Business

AACSB ACCREDITED

Making the big decisions with Big Data.

Survival in today's marketplace demands professionals who combine a passion for innovation with the ability to analyze and interpret large volumes of data. But few managers possess the technical training to successfully lead their organization's forays into technologies, such as Twitter, Facebook and the "Internet of Things." That leaves those companies unable to capitalize on the limitless opportunities available through such universally available tools and the endless data they provide.

The BI&A program provides the analytical and professional skills necessary to take advantage of this data, to move organizations from the traditional mode of intuition-based decision making to fact-based decision making. The curriculum covers the concepts and tools at the forefront of the Big Data revolution: database management, data warehousing, data and text mining, web mining, social network analytics, optimization, risk analytics, and technologies such as Hadoop and data stream analytics. Upon earning their degrees, students will have completed a capstone course requiring them to work on a major project, using real data, under the guidance of an industry mentor. Coursework also emphasizes extensive training in traditional business skills, such as oral and written communications skills, analytical thinking, and ethical reasoning.

Developed with industry insight.

The Stevens BI&A program was one of the first of its kind in the U.S. when it launched, and it remains ahead of the competition because of the input we solicit from the industry advisers on the program's board. We leverage our location just outside of New York to incorporate the knowledge and experience of Fortune 500 executives and key research leaders across industries. The input we receive emphasizes industry's need for analysts with a deep knowledge of the disciplines underlying data science, strong technical skills, an understanding of the business implications of their analyses and, most importantly, the ability to effectively communicate their findings to management. Our 36-credit, multidisciplinary curriculum reflects the demand for business-oriented, data-driven managers. Full-time students can complete the degree in 15 months.

Professional skills
Business and communication skills are developed through a strong learning culture nurtured by seminars, industry-supported job-skills workshops, talks by industry leaders and an active student club.

Disciplinary knowledge
The centerpiece of the program is a rigorous 12-course curriculum that emphasizes both theory and practice, culminating in a practicum course in which students work on real applications alongside industry mentors in a student's area of interest.

Technical skills
Strong software skills are a requirement to manipulate, analyze and mine Big Data. To that end, students attend a series of free boot camps that provide training in industry-standard software packages, such as SQL, R, SAS, Python and Hadoop. These intensive boot camps occur over four three-day weekends in the fall and spring semesters.

Infrastructure
Stevens' Hanlon Financial Systems Lab offers the kind of technology in use on Wall Street, from top-of-the-line data management software to Bloomberg terminals, and a number of large data sets that support research and industry-strength educational exercises.

"The strength of the program lies in the combination of rigorous classwork and hands-on team projects. Combining that with a fantastic location, a truly engaged faculty and industry advisers makes the Stevens BI&A degree **the perfect jump-start to an analytics position** in any business domain."

— Alex Liskov, BI&A student

"The software tools taught at Stevens are central to industry. A lot of companies use these programs, and **knowing them gives you an edge over other people.** The way professors teach them, and the fact that they're teaching them, gives you an advantage over students from other universities."

— Enrique Lance, data scientist, Collaborative Consulting, Class of 2014

Immediate demand.

Our graduates are hired by companies in a broad range of industries, including financial services, consulting, media, life sciences, information technology and telecommunications. They have begun their careers in both large well-established companies and in small entrepreneurial startups in the field of data analytics. Our graduates have accepted positions at companies such as Affinity Solutions, Apple, Bank of America, Ernst & Young, Morgan Stanley, New York Times, Pricewaterhouse Coopers, SanDisk, TIAA-CREF and Verizon Wireless.

BI&A graduates can immediately apply knowledge learned in the classroom to transform Big Data into business intelligence that can be used to drive efficiency, maximize investments, understand consumer and market data, and leverage overall knowledge for effective decision making.

*"Companies are really looking for people who can use analytics to interpret the data, but they also need business acumen — and **in this program, they get both.**"*

Rochelle Lostumbo, business unit executive, IBM Software Solutions

Curriculum

The curriculum covers critical areas in database, optimization and risk, data mining, management applications, analytics, and statistics. The following courses are required for the master's degree:

Organizational Context
MGT 615 Financial Decision Making

Database
MIS 630 Strategic Data Management
MIS 636 Data Warehousing & Business Intelligence

Optimization and Risk
BIA 650 Optimization and Process Analytics
BIA 670 Risk Management Methods & Applications*

Statistics
BIA 652 Multivariate Data Analytics
BIA 654 Experimental Design

Data Mining
MIS 637 Knowledge Discovery in Databases
BIA 656 Statistical Learning & Analytics*

Social Networks
BIA 658 Social Network Analytics
BIA 660 Web Analytics

Management Applications
BIA 672 Marketing Analytics*
BIA 674 Supply Chain Analytics*

Big Data Technologies
BIA 676 Data Stream Analytics*
BIA 678 Big Data Seminar*

Practicum
BIA 686 Applied Analytics in a World of Big Data

* Choose two of these six with permission of adviser

Data Science Concentration

In their second semester in the BI&A program, students with strong computational backgrounds may apply for admission to the concentration in Data Science. Data Science students are required to take a minimum of two, and a maximum of four, courses offered by the Computer Science, Financial Engineering and Mathematics departments at Stevens.

Certificate programs

Stevens also offers four-course, 12-credit graduate certificates for practitioners interested in improving their understanding of specific areas of data, web and social analytics, and their ability to manage data-intensive applications in industry. Certificates are available in:

• Business Intelligence and Analytics

• Marketing Analytics

• Supply Chain Analytics

Please visit **stevens.edu/howe/BIA** for a listing of the required courses for each.

The Stevens advantage

Our degree programs are designed to meet the needs of corporations and their employees by balancing academic rigor with flexibility and value:

- **Leading faculty.** Our BI&A faculty consists of leading management scientists, researchers and seasoned professionals from both industry and government.

- **Relevant research.** We provide a research-based curriculum that addresses the skill requirements needed in industry.

- **Impressive infrastructure.** The state-of-the-art Hanlon Financial Systems Lab supports academic programs in BI&A, quantitative finance and financial engineering through the latest hardware and software and the incorporation of real-time data to support innovative research into the most urgent problems in business.

- **Industry input.** The design and execution of the BI&A program is guided by an advisory board of top executives with expertise in the financial services, consulting, life sciences, media and retail industries, among others.

- **Flexible delivery.** Courses can be taken at our vibrant campus in Hoboken, NJ, just minutes from Manhattan, or online through our fully accredited WebCampus platform.

ABOUT STEVENS INSTITUTE OF TECHNOLOGY

Founded in 1870 and celebrating more than 140 years of innovation, Stevens Institute of Technology, The Innovation University™, lives at the intersection of industry, academia and research. Its students, faculty and partners leverage their collective experience and a culture of innovation, research and entrepreneurship to confront global challenges in engineering, science, systems and business.

ABOUT THE SCHOOL OF BUSINESS

The School of Business is one of the world's pre-eminent institutions in the education of current and future professionals who lead and manage technological innovation in businesses around the world. Our programs are designed and delivered by leading academic researchers and industry practitioners who are masters of their respective disciplines and important contributors to the creation of new knowledge in the field.

ADMISSION REQUIREMENTS FOR MASTER'S PROGRAM

- A bachelor's degree in science, mathematics, computer science, engineering or a related field, with a "B" average, from an accredited school.
- Official college transcripts.
- Two letters of recommendation.
- One year of calculus.
- One course covering basic probability, hypothesis testing and estimation.
- TOEFL (for international students).
- A competitive GMAT or GRE score.*
- At least one year of industry experience preferred.

  *Not required for graduate certificate programs.

CONTACT

Dr. Christopher Asakiewicz
BI&A Program Director
(201) 216-8012
BIA@stevens.edu

Dr. Edward (Ted) Stohr
BI&A Program Coordinator
(201) 216-8915

School of Business
Stevens Institute of Technology
Babbio Center, 4th Floor
Castle Point on Hudson
Hoboken, New Jersey 07030

stevens.edu/business/BIA