

# MASTER OF MANAGEMENT IN ANALYTICS



Transform businesses with  
data-driven solutions



McGill MMA | DESAUTELS

# 01

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## Tackle the greatest challenges of our time

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Housed within one of the world's top 25 universities, the Desautels Faculty of Management has earned a global reputation as a leading business school. Beyond the rankings and accolades, Desautels offers a warm, close-knit community that embraces the wide diversity of strengths and perspectives its members contribute. You will join a vibrant group of students who come to Canada from more than 70 countries around the world in pursuit of an education that combines research, practice, and teaching in a highly collaborative environment. A growing team of world-class faculty members ensures that our programs at the undergraduate, masters, executive, and PhD levels bridge the gap between theory and practice, at every stage of the academic journey. The calibre of their teaching is matched only by the calibre of their research, which extends across disciplines to tackle the greatest challenges of our time.

After more than 50 years as a professor, researcher, and administrator at McGill, I still look forward to going to work every day. I have witnessed dramatic growth and change over the decades, but one thing remains the same. Through every season, Desautels will prepare you to go out into the world and make an impact that goes far beyond the bottom line.

*“Desautels will prepare you to make an impact that goes far beyond the bottom line.”*



**Morty Yalovsky**  
*Dean, Desautels Faculty of Management*

# 02

## Join a new generation of leaders



**TOP 10**  
BUSINESS ANALYTICS

QS WORLD UNIVERSITY RANKINGS  
2021

**McGill MMA**

**#1 + #10**  
Canada\* Worldwide\*

\*QS Masters in Business Analytics Ranking 2021

*“Our MMA program is geared toward students looking to upskill in the area of business analytics.”*

At Desautels, we constantly have a finger on the pulse of the market through our close ties with industry leaders. Over the past decade, we have seen the demand for skills in business analytics skyrocket as organizations recognize the power of data to optimize their decision-making processes. While our existing MMA program includes a strong analytical component, we decided to take it to the next level with a specialized one-year program designed to prepare students for meaningful careers in an analytical role.

Our MMA program is geared toward students looking to upskill in the area of business analytics, ranging from recent graduates with proven quantitative skills to more experienced professionals who aim to pivot to a new field. Our students represent a diversity of backgrounds, skill sets, and experience levels, but they share a passion for studying analytics from a business or management perspective. Given our class patron/matron, the dedicated members of our MMA Industry Advisory Board, and our vast network of professional guest lecturers/partners, students enjoy unique access to leaders from a wide variety of industries. For a new generation of leaders, impact starts here.



**Professor Mehmet Gumus**  
Academic Director, MMA

# 03

## MMA Curriculum

The MMA curriculum strikes a balance between advanced statistics, technology, and business strategy to give students a broad range of practical skills and perspectives.

### The 3 pillars of MMA

Advanced Statistics	Technology	Business Strategy
Machine Learning Resampling Methods Optimization	Coding with R/Python/SQL Cloud Infrastructure Technology Stack	Consulting Discovery Solution Development Data Visualization

### MMA Program Phases

2021	EXPERIENTIAL LEARNING MODULE		
TERM 1 Foundation	TERM 2 Technical Core	TERM 3 Industry Application	TERM 4 Transition to Market
2 Months	3 Months	4 Months	3 Months
Build your statistical problem solving acumen in the core		Enhance your base by learning the latest technologies and how you can scale your skills	

### MMA Program Structure

Length	Summer	Fall	Winter	Summer	Fall
1 year	Core	Core	Electives	BUSA 649/Electives	
1.5 year	Core	Core	Electives	Internship*	Electives

\*The MMA offers a 1.5-year option that includes an internship for students interested in gaining additional professional experience prior to graduation

## Follow your passion for analytics

In the final two terms of the MMA, explore a wide variety of management analytics application topics through complementary classes. While the core module teaches the fundamentals, the complementary module presents an opportunity to build on that foundation and explore particular areas of interest.



### Sample complementary courses:

- Introduction to Artificial Intelligence and Deep Learning
- Enterprise Analytics using Cloud Computing
- Social Media Analytics
- Text Analytics
- Healthcare Analytics
- Epidemiology Analytics
- Pricing Analytics
- Revenue Management

And more [...]



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# Analytics Consulting: Translate theory into practice with a real client project

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*“Experiential Learning underpins the critical link between theory and practice, and is a cornerstone of our program.”*

**Professor Shoeb Hosain**  
Program Director, MMA



The required Analytics Consulting module forms the experiential core of the MMA program. Work alongside experienced industry professionals to solve a data and analytics problem their company is facing in an effort to boost the client's top or bottom lines.

You will be assigned to a live client and a role that leverages your particular background and strengths to produce results on behalf of the client.

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## **Student consulting positions include:**

- **Analytics Strategist**
- **Quantitative Modeler**
- **Technical Architect**
- **User Experience Designer**

# 04

## Your journey continues here



→ Thara Dawoodjee, MMA '20

*Bell  
Manager, Operational Strategy  
B.Ed., Physical and Health Education*

"It was daunting to enter the MMA program without any technical skills or experience in the data field. Thankfully, the basic introduction to coding helped me get up to speed. The program is structured so that students with diverse backgrounds—in my case, physical and health education—can quickly build a marketable skill set with enough hard work. After learning to use a wide variety of software and programs, I now have a toolbox of specialized skills to bring to the table. You don't just dip your toes into analytics through the MMA program. You dive deeper into every possibility."



→ Junfeng Yang, MMA '19

*Bloomberg LP  
Dividend Forecasting Data Analyst  
B.Sc., Mathematics*

"I chose the MMA program because I was looking for tools to apply my background in mathematics in real-world situations. Without a doubt, the program delivered. The definite highlight was the opportunity to partner with a startup for my consulting project. Throughout the year, I learned to work with stakeholders from different disciplines and backgrounds. I learned that being a data analyst is just as much about communication and strategy as it is about coding. Not many programs provide this level of practical experience. I graduated with the right blend of skills to stand out from the pack and land a job as a data analytics analyst at a leading technology and media company."



→ Tamar Bulka, MMA '20

*Allianz Euler Hermes  
Regional RICC Data Analyst  
B.A. & B.Sc., Computer Science & Economics*

"The MMA program provided a smooth transition from my undergraduate degree to the workforce. Through the consultancy project, I learned how to interact with C-suite leaders and collaborate well on a team. It was especially rewarding for my classmates and I to apply the skills we learned in the classroom in a practical setting. The multi-disciplinary nature of the program equipped us with the right mix of technical and business skills to translate data into real impact. After graduation, the same client I worked for as a consultant offered me a job. Thanks to the MMA, I entered the workforce with confidence."



→ Ramy Hammam, MMA '20

*Rogers Communications  
Senior Data Scientist  
B.Sc., Finance*

"While working in finance, I developed a strong interest in analytics when I realized how much of my work could be automated and optimized. The MMA program provided the specific skills I needed to take my career in a new direction. Gaining proficiency in the areas of technology, business, and statistics paid off when I found a job as a senior data scientist at a major telecommunications firm after graduation. Now I'm building tools that more than 300 colleagues are using on a daily basis. I'm grateful to the MMA for equipping me to lead in a field that matters."

# 05

## Make your mark in Montreal

When your campus is right in the heart of downtown Montreal, the opportunities to connect with world-renowned leaders and like-minded students and faculty members are limitless.



- **Events and Speaker Series:** From CEOs of major corporations to startup founders, Montreal's most industry-disrupting leaders share advice and perspective at campus events and speaker series.
- **Case Competitions:** McGill students have a reputation for delivering under pressure in case competitions hosted on campus such as the McGill International Portfolio Challenge (MIPC), the R(Tech) Global Retail Challenge, and the McGill-Microsoft Discover AI Challenge.
- **Dobson Centre for Entrepreneurship:** Anyone with a good idea and a plan to turn it into reality will find unparalleled mentorship and development opportunities within the Dobson Centre's 10,000-member ecosystem.
- **Student Clubs:** Student clubs including the Desautels Graduate Student Society, McGill Business Technology Club, and Desautels Graduate Consulting Club create opportunities for master's students to connect with each other and with local industry leaders at networking and recreational events.



### Montreal Canadiens

Also referred to as the Habs, Montreal's professional ice hockey team packs large, passionate crowds into the downtown Bell Centre for home games.

### Lachine Canal

Once an industrial workhouse, the Canal is now a haven for recreational boaters, runners, and cyclists along 14.5 kilometres of waterways and trails.



### Mont Royal

Montreal's largest public park provides almost 500 acres of green space to exercise, picnic, and enjoy free entertainment. Walk, cycle, blade or ski to the summit for a skyline view of the city.

### Igloofest

Every January, tens of thousands of Montrealers bundle up for an outdoor electronic music festival over four consecutive weekends.

### Iconic Restaurants

Montreal's culinary scene lives up to the hype. Head to St. Viateur Bagel for some of the world's best bagels, Schwartz's Deli for traditional Montreal smoked meat, and La Banquise for a heaping plate of poutine.

### Underground City

The largest underground city network in the world features 32 kilometres of restaurants, shops, metro stations, and entertainment venues to explore.



### Place des Arts

Canada's largest cultural and artistic complex is a mecca for fans of music, theatre, dance, and contemporary art.

### Old Port

Old-world charm meets new-world culture in the streets of the Old Port. Head down to the river to grab a drink at a rooftop bar, ride the Ferris wheel, or catch a performance of Cirque du Soleil.

# 06

## Dream big in a world-class AI hub

There's a reason Montreal claims the title of best student city in North America year after year. A thriving arts and cultural scene, low cost of living, low level of crime, and plentiful job opportunities attract students from all over the world. No matter what your background or creed, you will encounter the welcoming, tolerant vibe of a city that embodies *joie de vivre* and prioritizes a high quality of life. You will join a young, diverse population of 4.2 million people who shape their city into a more appealing destination every year. Montreal has long enjoyed a reputation for being an artistic and culinary hotspot, but it has more recently evolved into a hub for technology, artificial intelligence (AI), and entrepreneurship. As the island pulses with the energy of constant growth and change, you will have a unique opportunity to change and grow with it.

**Montreal ranks #1 in Canada and #6 in the world on the 2019 QS Best Student Cities index.**

**The Greater Montreal area is home to more than 250,000 students—more students per capita than any other North American city.**

**Students enjoy a significantly lower cost of living in Montreal than in most major cities including New York, Toronto, London, Los Angeles, Melbourne, and Beijing.**

### Discover the power of location

In the past five years, Montreal has emerged as the world's most influential hub for artificial intelligence companies, initiatives, and research.

- Montreal is home to the largest AI academic community in the world. More than 250 researchers and doctoral students at McGill University and Université de Montréal are actively conducting research in AI-related fields including computer vision, language processing, and reinforcement learning.
- McGill University's Centre for Intelligence Machines (CIM) has advanced cutting-edge research in AI and robotics for more than 30 years.
- Led by AI pioneer Yoshua Bengio, Mila-Quebec AI Institute supports a community of 450 world-class researchers who specialize in AI and machine learning.
- Tech titans have established research labs in Montreal with plans to expand their investment in the city's AI ecosystem.



*“Tech titans have established research labs in Montreal with plans to expand their investment in the city's AI ecosystem.”*



**Facebook AI Research**—Led by McGill professor Joelle Pineau since its opening in 2017, Facebook AI in Montreal employs more than 60 people to undertake projects related to topics like advancing MRI technology, improving Facebook algorithms, and generating content from photos. With a special focus on reinforcement learning and dialog systems, Montreal's Facebook AI scientists form an integral branch of a network of AI scientists across Facebook AI's Menlo Park, New York, and Paris labs.

**Microsoft Research**—In close partnership with Mila and Yoshua Bengio, the Microsoft Research Montreal lab focuses on understanding concepts in reinforcement learning, deep learning and language, and the uses of computational systems in advancing broader societal goals.

**Google Brain**—Created in 2017, Montreal's Google Brain team is an extension of the global operation that works to expand AI applications throughout Google. Google Brain

applies research in the areas of deep learning, reinforcement learning, and optimization to a wide range of programs including generative modeling, machine translation, and game playing.

**Deepmind**—The British subsidiary of Alphabet opened an international research laboratory in Montreal in 2017 in collaboration with McGill. The neuroscience-inspired AI company develops learning algorithms to solve global problems under the leadership of Doina Precup, a McGill professor.

**Samsung Research**—Samsung's AI Centre in Montreal performs research in machine learning and language understanding in partnership with Samsung AI centres in Silicon Valley and Toronto. Its leader, Gregory Dudek, is a current McGill professor and former director of the McGill University School of Computer Science.

# 07

## Seize opportunity at the intersection of business and technology



*“The MMA is a perfect blend of skills to get you ready for the market. Think of it as leveraging technical components from an MSc and strategic elements from an MBA.”* Professor Shoeb Hosain

**MBA**

BUSINESS STRATEGY  
TEAM MANAGEMENT



**MMA**

DATA DRIVEN DECISIONS  
TECHNICAL AUTOMATION



**MSc**

ALGORITHMIC APPLICATION  
CODING/SOFTWARE

As Big Data continues to reshape the business landscape, it's not enough to offer business or technical skills. Business leaders without technical skills lack the practical tools to make their vision take flight, and technical leaders without business acumen lack strategy and direction. The MMA program is carefully designed to combine elements of pure strategy programs, like the MBA, and pure technology programs, like the MSc in Data Science. Over the course of a year, students gain extensive experience in using data science algorithms and cloud computing software, as well as fundamental training in managing analytics teams and developing data-driven insights.

Throughout the MMA program, experiential learning underpins the critical link between theory and practice through two analytics consulting projects. In particular, our unique 10-month experiential consulting module provides a unique opportunity to solve data and analytics problems for a corporate organization in a real-world setting. With a wide range of practical tools and hands-on applications resulting from their investment in the MMA program, our students will be prepared for a career in data and analytics no matter what their background.



**Professor Shoeb Hosain**  
Program Director, MMA

# 08

## Snapshots of success

*“This partnership has received so much positive internal feedback that our past two presidents have attended the students’ final presentations to see the results for themselves.”*

**David Deshaies**  
Business Analytics Project Manager



### Pratt & Whitney—Aerospace

In the aviation industry, a substantial amount of time and investment goes into ensuring that the right parts arrive in the right quantity at the right time. Through partnering with the MMA program, Pratt & Whitney aimed to organize data on delays and breakdowns into a tool that could improve operations. “In collaboration with our clients and coaches, we tried and failed several times to develop a predictive tool using machine learning algorithms,” remembers Jessica Zhang, a member of the team of MMA students tasked with the job.

After months of troubleshooting, the team developed a sophisticated search engine that allows users to search for past data on breakdowns and learn from it. They also created a separate dashboard to visualize logistical trends. “Overall, our partnership with Pratt & Whitney provided valuable hands-on experience,” says Jessica. “We learned to work closely with a client and deliver results.”



*“Our team involved in supply chain analytics learns a lot from the students.”*

**George Craigie**  
Senior Director for Supply Chain Analytics & Technology

## McKESSON

### McKesson—Healthcare Logistics

“It’s easy to understand why McKesson is so highly regarded among MMA students,” says Paul-Emile Gras. “They were always willing to answer questions, but they never micromanaged us. They gave us the freedom to create.” McKesson’s analysts had developed complex tools to predict potential disruptions to their supply chain from internal factors, but they turned to the MMA team to analyze the impact of external factors like weather and economic climate. “My role as a data modeler was to use machine learning and AI models to develop a prediction model, Paul-Emile explains.”

His team ultimately created a feature selection process to determine new external predictors and constructed a dashboard for multiple user scenarios. “The McKesson team wanted us to surprise them with something new and interesting, and we were able to meet that

challenge using everything we had learned in the MMA program,” says Paul-Emile. “In the end, we were able to provide insights that McKesson lacked.”

George Craigie, Senior Director for Supply Chain Analytics & Technology at McKesson, affirms the value of exchanging knowledge with the MMA students. “Our team involved in supply chain analytics learns a lot from the students,” he says. “We are highly motivated to helping the students learn from us as well, as it translates to better results for our company and sets them up for success in their future career endeavours.”



## Allianz Euler Hermes—Insurance

“Like many companies, we have certain projects that benefit greatly from outside expertise,” explains Aaron Lindstrom, Regional Head of Transformation and Digital Partnerships for Allianz Euler Hermes. “Partnering with the MMA program gave us the opportunity to access new talent in a way that brought a fresh perspective to the table.”

Led by Ruben Alba, the MMA student team was tasked with creating an automated system to extract data from financial statements. “None of us had experience in the insurance industry, but we worked hard to get up to speed and go above and beyond what the client expected,” says Ruben. In the end, the team used an expert systems methodology to create an automated process. To the client’s surprise, they also performed a sentiment analysis technique to enhance the final product.

*“Partnering with the MMA program gave us the opportunity to access new talent in a way that brought a fresh perspective to the table.”*

**Aaron Lindstrom**  
Regional Head of Transformation and Digital Partnerships

“Without a doubt, the team exceeded our expectations,” says Aaron. “We were so impressed with their work that we would have hired all of them if we could, but we ended up hiring one of the students for her unique ability to use tools that analyze company sentiment.” For Ruben and his team, the experience provided a valuable opportunity to leverage their technical skills and business knowledge in partnership with senior industry leaders. “It was tremendously rewarding to create a tool that will save our client time and money,” Ruben says, “and we were thrilled as a team to have one of our own receive a job offer.”

the montreal  
children's  
hospital  
foundation



## Montreal Children’s Hospital—Healthcare Services

After the outbreak of COVID-19, MMA students assigned to partner with Montreal Children’s Hospital leveraged their skills to support frontline workers. In response to the rapid rise of telehealth services, they developed digital questionnaires to evaluate the quality of these services and used a visualization tool to analyze appointment volume and cost impact.

They also addressed the persistent shortage of personal protective equipment (PPE). “If we can help our client order PPE so they have a better, more stable supply for the doctors, nurses, and the other team members, then they’re more able to do their jobs,” says Victoria McKeown, a member of the MMA student team. “We’ll be helping them help the community.” The team identified patterns in PPE usage and developed a model to calculate future usage to maintain an adequate supply.

*“In a relatively short period of time, the students were able to gather the information, get comfortable in an area that they’re not very familiar with, and come up with sophisticated solutions that are immediately applicable.”*

**Dr. Adrian Dancea**  
Head of the pediatric cardiology division

Dr. Adrian Dancea, the head of the pediatric cardiology division at Montreal Children’s Hospital, marveled at what the students accomplished by the end of their partnership. “In a relatively short period of time, the students were able to gather the information, get comfortable in an area that they’re not very familiar with, and come up with sophisticated solutions that are immediately applicable,” Dr. Dancea says. The partnership between the Children’s and the MMA program “needs to continue and needs to expand,” he concludes. “This should only be the beginning.”

# 09

## Launch a career that matters

### Internships

The MMA offers a 1.5-year option that includes an internship for students interested in gaining additional professional experience prior to graduation.

### Some of our internship placements include

- Boston Consulting Group
- CIBC
- Bell
- TD Securities

### Class profile—Cohort 2019

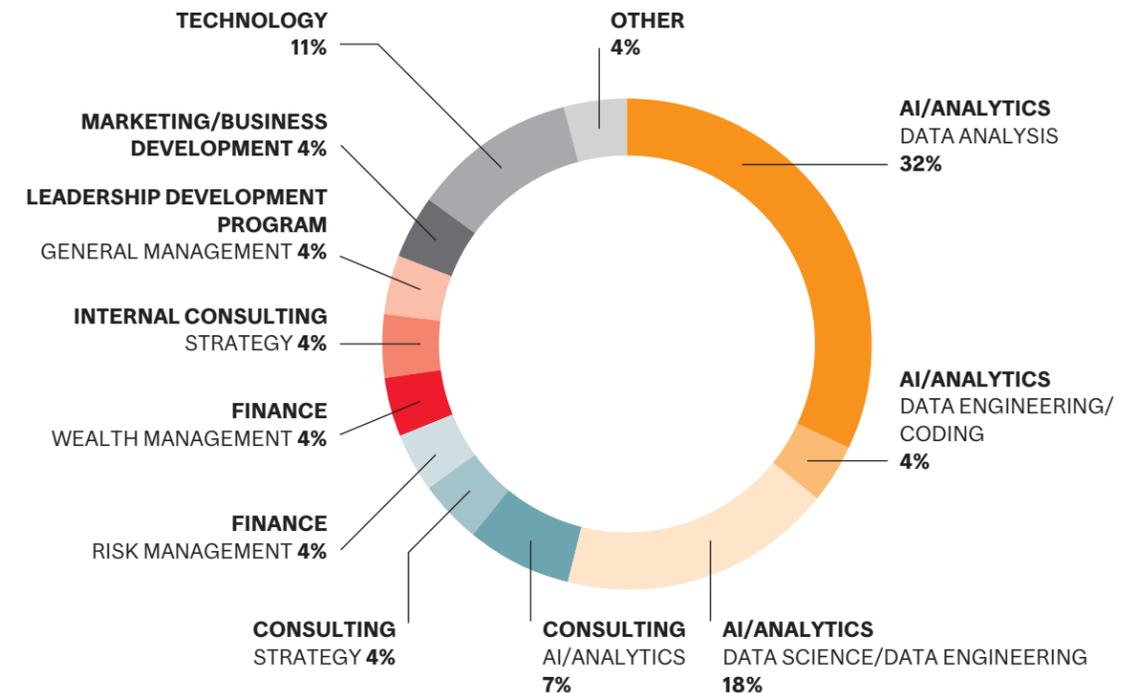
As an MMA student, you will gain exposure to a wide variety of perspectives through the diversity of your cohort. Selected from a highly competitive pool of applicants, your classmates will hold degrees in business, economics, commerce, science, technology, engineering, mathematics, and other related disciplines from universities around the world.

**29%** Domestic students

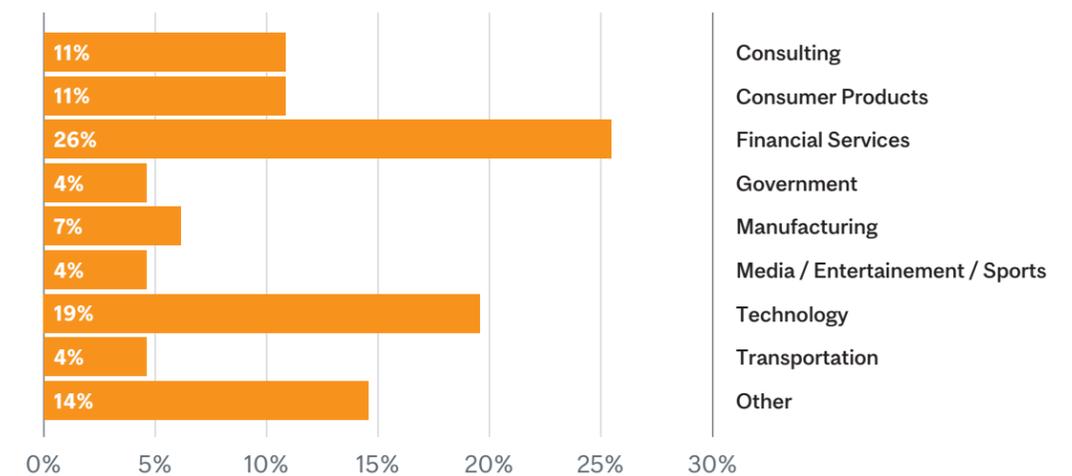
**71%** International students



### 2019 Employment statistics (by function)



### Employment by industry



# Admission requirements

- Undergraduate degree
- Curriculum vitae
- Two letters of reference
- Statement of purpose
- GMAT or GRE—not required for students graduating from Canadian & U.S. universities
- TOEFL or IELTS, if applicable

# Scholarships

A generous community of alumni and friends of Desautels funds entrance scholarships every year. All MMA students are considered for these scholarships, upon acceptance, without any action required on their part.

Take the next step > Apply online

[mcgill.ca/mma](http://mcgill.ca/mma)

Submit your application by the following dates:

<b>ROUND 1</b>	October 31	
<b>ROUND 2</b>	December 15	
<b>ROUND 3</b>	February 15	<b>Final deadline</b> (International students)
<b>ROUND 4</b>	May 15	<b>Final deadline</b> (Canadian citizens / Permanent residents)



## Desautels Faculty of Management

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Business  
for change

**MADE**  
by McGill