

# MASTER OF SCIENCE **BUSINESS ANALYTICS**

**Solving tomorrow's challenges with today's data insights**



## **UNIQUE CURRICULUM**

Access an interdisciplinary curriculum designed by NUS Business School and NUS Computing

## **COLLABORATIVE INDUSTRIAL PARTNERSHIPS**

Interact with more than 100 organisations across different industries

## **DIVERSE COMMUNITY**

Connect with a global network of students and alumni across 28 countries and regions

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**NUS Business Analytics Centre**

SUPPORTED BY NUS BUSINESS SCHOOL & NUS COMPUTING

# SOLVING TOMORROW'S CHALLENGES WITH TODAY'S DATA INSIGHTS



QS World University Rankings 2019 – 2022

## NATIONAL UNIVERSITY OF SINGAPORE

National University of Singapore (NUS) is one of the world's leading universities, with over 40,000 students across three campuses. By offering a distinctively Asian yet global experience, NUS gives its students the opportunity not only to excel academically, but also to grow socially. NUS is recognised for its breadth of academic programmes, experiential learning, entrepreneurship education and impactful research. As we continue to grow from strength to strength, we take pride in nurturing our students and equipping them with the necessary skills to be the leaders of tomorrow.

## NUS COMPUTING

The NUS School of Computing is the most established computing school in Singapore and offers outstanding undergraduate and graduate degree programmes in Computer Science, Information Systems, Computer Engineering, Business Analytics and Information Security, as well as specialisations in emerging areas of importance such as artificial intelligence, fintech, blockchain, analytics and security.

The exceptional education students experience here, coupled with the demand for computing talent in all fields and industries, make NUS Computing graduates highly sought-after. We instil our students with leadership qualities and a spirit of entrepreneurship through mentorship, community service initiatives and special programmes.

## NUS BUSINESS SCHOOL

NUS Business School has consistently received top rankings in the Asia-Pacific region by independent publications and agencies such as Financial Times, Economist Intelligence Unit, and QS Top MBA in recognition of the quality of our programmes and graduates. The School is accredited by AACSB and EQUIS, signifying that NUS Business School has met the highest standards for business education.

## NUS MASTER OF SCIENCE IN BUSINESS ANALYTICS



QS Business Masters Ranking:  
Business Analytics 2021  
One of the pioneering multidisciplinary  
programmes in Business Analytics

## NUS COMPUTING



QS World University Rankings by  
Subject 2021



QS World University Rankings by  
Subject 2021

## NUS BUSINESS SCHOOL



Times Higher Education World  
University Rankings 2021 by Subject





ICube building, 21 Heng Mui Keng Terrace, #03-47, Singapore 119613

## ABOUT MSBA

The NUS Master of Science in Business Analytics (MSBA) programme is offered by the NUS Business Analytics Centre (BAC), and jointly supported in equal partnership by NUS Business School and NUS Computing.

Taught by award-winning academics from both Schools, the NUS MSBA is offered both full-time and part-time. This programme is designed to facilitate experiential learning through a balance of intellectual academic rigour and hands-on applications. The unique feature and highlight of the programme is the Capstone Module which spans across one year<sup>1</sup> and consists of capstone lectures, industrial analytics seminars, business analytics innovation challenge and capstone project.

The NUS MSBA boasts a strong network of industry partners that our students can interact with and learn from, to enhance their career prospects and competencies in the field. Upon completion of the programme, NUS MSBA graduates will be well-equipped with skills such as machine learning and able to use relevant data-driven techniques and tools to understand and resolve complex business analytics problems, a skill highly sought-after in different industries such as finance, retail, information technology, supply chain, and healthcare, both locally and internationally.

<sup>1</sup> The capstone module for part-time students spans across the duration of their study.

## NUS BAC

In 2013, NUS BAC was established in collaboration with IBM to develop a talent pool of business analytics professionals to meet the needs of companies looking to improve their businesses through the use of analytics. In a 5-year collaboration that ensued, NUS offered academic expertise to design, craft and conduct the MSBA programme while IBM contributed industrial knowledge.

Global interest in the field of analytics has since grown tremendously, with companies across various industries actively seeking for talent who excel in the analytics field. To date, more than **500** industrial analytics projects were completed by NUS MSBA students, with the school forming valuable partnerships with more than **100** organisations.

## OUR DIRECTORS



**KHOO Siau Cheng**  
Associate Professor  
NUS Computing  
Co-Director



**James PANG Yan**  
Associate Professor  
NUS Business School  
Co-Director



**HUANG Zhiyong**  
Associate Professor  
NUS Computing  
Deputy Director



**QUEK Khor Ping**  
Visiting Senior Fellow  
NUS Business School  
Deputy Director

## ADVISORY BOARD



**Mr Abraham Thomas**  
IBM Global Business  
Services, China  
Senior Partner



**Dean Andrew K. Rose**  
NUS Business School  
Distinguished Professor  
and Dean



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Integrated Health  
Information Systems (IHIS)  
Group Director, Emerging  
Services and Capabilities



**Mr Ian Wilson**  
Wilson Innovation Lab  
CEO  
Chairman



**Mr Jeremy Ong**  
AXA Singapore  
Chief Customer &  
Operations Officer



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Cybernaut Investment  
Group  
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and Dean



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SAP  
President Asia Pacific  
Japan



**Mr Sameer Gupta**  
DBS  
Managing Director,  
Chief Analytics Officer



**Mr Shah Bhavesh**  
ConvaTec Group  
Global Vice President,  
Finance and Operational  
Excellence



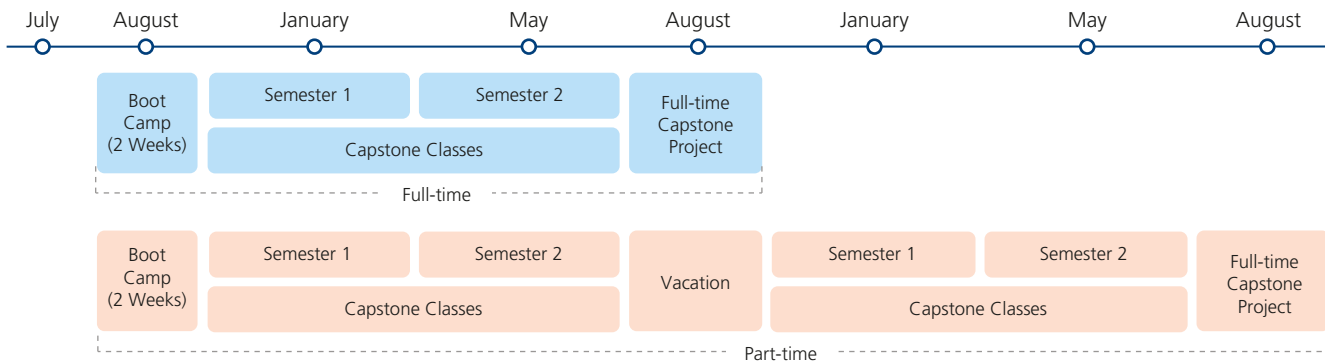
Students must complete a total of 44 modular credits, which comprises of 8 modules (5 essential, 3 electives<sup>1</sup>) and 1 Capstone Module. The MSBA Capstone Module will be a one-year-long module consisting of capstone lectures, industry analytics seminars, and a 3 - 6 months full-time<sup>2</sup> capstone project.

<b>5 ESSENTIAL MODULES</b>	<ul style="list-style-type: none"> <li>• Foundations of Business Analytics</li> <li>• Advanced Analytics and Machine Learning</li> <li>• Analytics in Managerial Economics</li> <li>• Operations Research &amp; Analytics</li> <li>• Data Management and Warehousing</li> </ul> <p>20 modular credits   4 modular credits per module</p>												
<b>3 VERTICAL SECTOR MODULES</b>	<table border="0"> <tr> <td data-bbox="314 786 621 811"> <b>Big Data Analytics Techniques</b> </td> <td data-bbox="669 786 867 811"> <b>Consumer Analytics</b> </td> <td data-bbox="1079 786 1286 811"> <b>Statistical Modelling</b> </td> </tr> <tr> <td data-bbox="314 820 621 887"> <ul style="list-style-type: none"> <li>• Big Data Analytics Technology</li> <li>• Cloud Computing</li> <li>• Neural Networks and Deep Learning</li> </ul> </td> <td data-bbox="669 820 1044 887"> <ul style="list-style-type: none"> <li>• Hands-on with Business Analytics (Consumer)</li> <li>• Introduction to Network Science &amp; Analytics</li> <li>• Marketing Analysis</li> </ul> </td> <td data-bbox="1079 820 1384 887"> <ul style="list-style-type: none"> <li>• Analysis of Time Series Data</li> <li>• Probability and Stochastic Processes</li> <li>• Spatial Statistics</li> </ul> </td> </tr> <tr> <td data-bbox="314 910 520 934"> <b>Healthcare Analytics</b> </td> <td data-bbox="669 910 920 934"> <b>Financial &amp; Risk Analytics</b> </td> <td></td> </tr> <tr> <td data-bbox="314 940 632 1030"> <ul style="list-style-type: none"> <li>• Economic Methods in Healthcare Technology Assessment</li> <li>• Healthcare Analytics</li> <li>• Information Technology in Healthcare</li> </ul> </td> <td data-bbox="669 940 1037 1009"> <ul style="list-style-type: none"> <li>• Data Analytics in Banking</li> <li>• Introduction to Network Science &amp; Analytics</li> <li>• Quantitative Risk Management</li> </ul> </td> <td></td> </tr> </table> <p>12 modular credits   4 modular credits per module</p>	<b>Big Data Analytics Techniques</b>	<b>Consumer Analytics</b>	<b>Statistical Modelling</b>	<ul style="list-style-type: none"> <li>• Big Data Analytics Technology</li> <li>• Cloud Computing</li> <li>• Neural Networks and Deep Learning</li> </ul>	<ul style="list-style-type: none"> <li>• Hands-on with Business Analytics (Consumer)</li> <li>• Introduction to Network Science &amp; Analytics</li> <li>• Marketing Analysis</li> </ul>	<ul style="list-style-type: none"> <li>• Analysis of Time Series Data</li> <li>• Probability and Stochastic Processes</li> <li>• Spatial Statistics</li> </ul>	<b>Healthcare Analytics</b>	<b>Financial &amp; Risk Analytics</b>		<ul style="list-style-type: none"> <li>• Economic Methods in Healthcare Technology Assessment</li> <li>• Healthcare Analytics</li> <li>• Information Technology in Healthcare</li> </ul>	<ul style="list-style-type: none"> <li>• Data Analytics in Banking</li> <li>• Introduction to Network Science &amp; Analytics</li> <li>• Quantitative Risk Management</li> </ul>	
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<b>CAPSTONE MODULE</b>	<p><b>The Capstone Module spans across 13 months and includes:</b></p> <ul style="list-style-type: none"> <li>• Capstone Lectures</li> <li>• Business Analytics Innovation Challenge</li> <li>• Industry Analytics Seminars</li> <li>• Business Analytics Capstone Project</li> </ul> <p>12 modular credits</p>												

<sup>1</sup>Students can select 3 modules from maximum 2 vertical sectors. The list is not exhaustive and is subject to change.

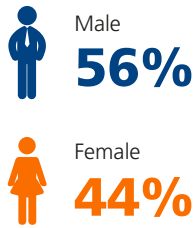
<sup>2</sup>Part time students are recommended to do their capstone projects with the companies they are working for. The Capstone Module for part-time students spans across the duration of their study but at half a load per semester as compared to the full-time students.

## ACADEMIC TIMELINE

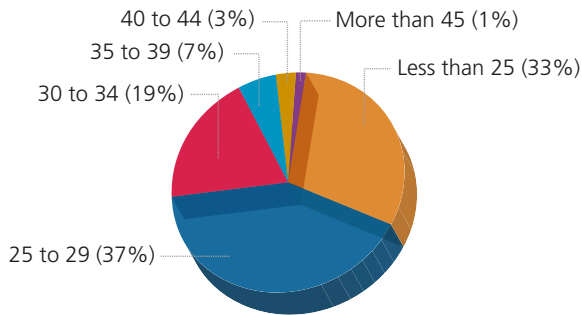


# STUDENT PROFILE

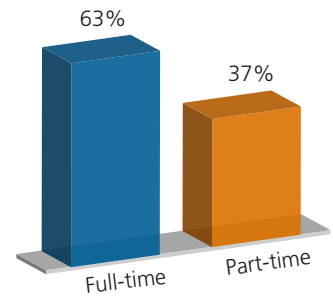
## Gender



## Typical Age Range



## Full/Part-Time



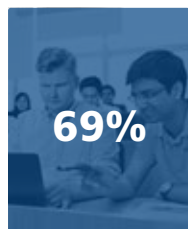
## Industry Background (Top 5)



## Educational Background (Top 5)



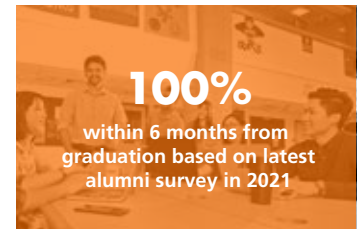
## International Students



## Years of Working Experience



## Employability



All information above are based on 2013 - 2020 intake and accurate as of 9 March 2021.



NUS MSBA students won first prize in Microsoft's Azure APAC Virtual Hackathon 2020



NUS MSBA student won first in Kaggle Analytics Competition, Data Science for Good: City of Los Angeles 2019



NUS MSBA alumni won Best Data Science Project Award in 2019 Data Science Showcase in Johnson & Johnson



NUS MSBA students won consecutively at ChengDu 80 Fintech Competition 2018 – 2020

# A C H I E V E M E N T S



NUS MSBA students won at online business analytics innovation challenge with partner companies such as EMC and PSA unboXed, amidst COVID-19 pandemic



NUS MSBA alumni emerged as regional finalists in Ernst and Young's 'Better begins with you' 2019



NUS MSBA students won first prize at MKE Hackfest 2018



NUS MSBA alumni won first prize in the CIKM AnalytiCup 2017

## TESTIMONIALS



NUS MSBA provided a deep understanding of the latest advances in AI, Machine Learning and Big Data which are important skills required in my day to day current role to bridge business, digital and data analytics. The greatest takeaway was being exposed to infinite possibilities of building data driven business models. Current scalability cloud compute and data analytics affords businesses significant new opportunities.

**Irving Sequeira**  
Senior Vice President - Digital Bancassurance, DBS Bank  
MSBA Intake 2014/2015



The NUS MSBA course has strengthened my analytical skills to gain insights of the business and operations opportunities as well as my ability to communicate information with a compelling narrative.

**Chua Hian Choon**  
Senior Director  
Systems on Silicon Manufacturing Co Pte Ltd (SSMC, JV of NXP and TSMC)  
MSBA Intake 2018/2019



The NUS MSBA taught me the nuts-and-bolts of data analytics and combines the best from both the business and computing worlds. There is also a strong emphasis on independent, self-directed study and this helped individuals develop independent critical business thinking, a skill that is highly sought after by companies.

**Ong Wee Ling**  
Senior Manager,  
Ministry of Health  
MSBA Intake 2016/2017



The greatest takeaway from NUS MSBA for me is that while it is very easy for anyone to implement Machine Learning with off the shelf packages and tools these days, real expertise only comes from a sound understanding of the science behind these models. I have to thank my professors and the programme for helping me to gain this understanding and also instilling the curiosity and self-drive to continuously update my knowledge. This has armed me with the confidence to lead my present team in new projects.

**Debosmita Chaudhuri**  
Vice President,  
Prime Services Client Analytics  
Strats, Goldman Sachs, London  
MSBA Intake 2017/2018

## PARTNERS AND ALUMNI LIST

The list is growing and not exhaustive.

### Consultancy Services

- Accenture
- BCG (Boston Consulting Group)
- Cognizant
- Deloitte
- Ernst & Young
- KPMG Services Pte. Ltd

### Consumer Goods

- Cargill
- Henkel
- Nestlé S.A.
- P&G (Procter & Gamble)
- Unilever Singapore Pte. Ltd.
- Zalora Group

### Government Agencies

- DSTA (Defence Science and Technology Agency)
- Enterprise Singapore
- Infocomm Media Development Authority (IMDA)
- Luxembourg Institute of Science and Technology (LIST)
- Ministry of Health (Singapore)
- PUB (Public Utilities Board)

### Financial Service and Insurance

- Allianz SE
- AXA Insurance Pte. Ltd.
- Bloomberg LP
- Bank of New York Mellon (BNYM)
- DBS Bank Ltd.
- Eastspring Investments (Singapore) Limited
- Goldman Sachs & Co. LLC
- Great Eastern Holdings Ltd.
- HSBC Bank (Singapore) Ltd.
- J.P. Morgan Chase & Co.
- Mitsubishi UFJ Financial Group, Inc.
- Morgan Stanley
- Munich Re Group
- NTUC Income
- OCBC Bank
- PayPal Pte. Ltd.
- Refinitiv
- Standard Chartered Bank
- State Street Corporation
- Swiss Re
- The Blackstone Group L.P.
- UOB (United Overseas Bank Ltd.)

### Information Technology

- Apple Inc.
- Baidu, Inc.
- Dassault Systèmes
- Dell Technologies Inc.
- Facebook, Inc.
- Google LLC
- GrabTaxi Holdings Pte. Ltd.
- Hewlett-Packard
- HubSpot, Inc.
- IBM
- Lenovo Inc.
- LinkedIn Corporation
- Logitech International S.A.
- Microsoft Corporation
- Oracle Corporation
- Palantir Technologies
- SAP
- SAS Institute Inc.
- SenseTime
- Twitter
- ViSenze Pte. Ltd.

### Retail and Ecommerce

- Alibaba Group Holding Ltd.
- Amazon.com, Inc.
- Chalhoub Group
- Lazada Group
- Shopee Singapore

### Healthcare

- Baxter International Inc.
- IHiS (Integrated Health Information Systems) Pte. Ltd.
- Johnson & Johnson Pte. Ltd.
- JurongHealth
- MOH Holdings Pte. Ltd.
- MSD
- SingHealth
- Zuellig Pharma

### Logistics & Manufacturing

- BASF SE
- Changi Airport Group
- DHL
- Dyson
- FAW Group
- Philips
- PSA Corporation Ltd.
- Robert Bosch
- SMRT Corporation Ltd.
- ST Engineering Electronics
- Tetra Pak, Inc.
- United Parcel Service (UPS)
- Y3 Technologies Pte. Ltd.

### Real Estate and Hotel

- Ascendas REIT
- CFLD (China Fortune Land Development Co., Ltd.)
- Marina Bay Sands Pte. Ltd.

## WORDS FROM OUR PARTNERS



The half-life of your knowledge is extremely short, so I would encourage every student to continue learning. As you go into the workforce, I would encourage you to not think of yourselves as data scientists or analytics experts. Rather, position your mindset to be problem solvers, inspiration providers, solution providers, or data evangelists.

#### Ian Wilson

Wilson Innovation Lab,  
CEO



The NUS MSBA students come with a fresh perspective in new techniques that they have picked up in school and all of that helped my data science team to grow and learn to do things differently. Each student was assigned with a real-life problem that we are solving on, and the range of real life problems is quite broad. In all our use cases, we have seen MSBA students add value to what we are enhancing.

#### Sameer Gupta

Managing Director,  
Chief Analytics Officer, DBS Bank



I would recommend both undergraduates and graduates to consider analytics as an area to further their pursuits. There is unlimited demand and potential in this field. If you have relevant experience and background in business analytics, and also the necessary capabilities, you will get an audience with almost any organisation in the marketplace today.

#### Abraham Thomas

Senior Partner,  
IBM Global Business Services, China



We had some great projects with the NUS MSBA students here at SAP. Not only was it a great capstone project but they have created real business impact for us. All of these capstone projects are using big data, machine learning, and real time analytics which helped us in gaining better business insights to run our company better.

#### Scott Russell

Executive Board Member, Customer Success, SAP



## BE A CATALYST OF DIGITAL TRANSFORMATION

There is only one intake in August each year for the Masters of Science in Business Analytics programme. Interested applicants must apply online at

[msba.nus.edu.sg/apply-now](https://msba.nus.edu.sg/apply-now)

For the list of documents and application checklist, please go to

[msba.nus.edu.sg/programme/admission-application](https://msba.nus.edu.sg/programme/admission-application)

### ADMISSION CRITERIA<sup>1</sup>

- A good Bachelor's degree with a good honours classification, preferably from Business, Computing, Economics, Engineering, Mathematics, Science or Statistics; or at least 2 years' relevant work experience
- A good quantitative score in GRE/GMAT for overseas degree-holders<sup>2</sup>
- Strong Mathematics foundation
- Good aptitude for programming

### APPLICATION PERIOD<sup>3</sup>

August intake (AY2021/22)  
**Opens on: 11 Oct 2021, Monday**  
**Closes on: 31 Jan 2022, Monday**

To apply, please submit an application via <https://msba.nus.edu.sg/apply-now> or scan the QR code on the right.



### PROGRAMME FEES<sup>4</sup>

Application Fee	Singaporeans and PRs	International students	Students are required to make an upfront payment of S\$4,000 <sup>6</sup> (incl. in tuition fees) upon acceptance into the programme.
S\$100	S\$53,000 <sup>5</sup>	S\$58,000 <sup>5</sup>	

<sup>1</sup>All credentials will be weighted by the quality of applicants each year. Hence, there is no minimum cut-off for any component.

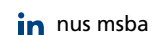
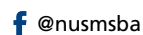
<sup>2</sup>An applicant do not need to submit a GRE/GMAT score if he has obtained a degree from either of the 4 local universities (NUS, NTU, SMU, SUTD).

<sup>3</sup>The application period is subject to change. Visit <https://msba.nus.edu.sg/programme/admission-application/> for latest updates.

<sup>4</sup>The amount reflects the current fees for the programme. Once a student is admitted, his tuition fees are locked in. However, NUS reserves the right to alter tuition fees for incoming cohorts.

<sup>5</sup>The tuition fee is subject to prevailing Goods and Services (GST) tax.

<sup>6</sup>S\$4,000 is non-refundable and non-transferable.



Information in brochure is accurate as of 11 August 2021. Download latest copy of brochure from <https://msba.nus.edu.sg/brochure-download/>

**NUS Business Analytics Centre**

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