



College of Humanities
and Sciences

Mathematics in NUS: A Door that Opens to Many Possibilities

Professor Victor Tan
Dept of Mathematics

**OPEN
HOUSE**
**27TH
FEBRUARY
2023**

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5 Reasons to Study Mathematics

#1

Finding Good Jobs

Doing the Math to find the Good Jobs

THE WALL STREET JOURNAL
WSJ.com

CAREERS | JANUARY 26, 2009, 11:20 A.M. ET

Doing the Math to Find the Good Jobs

Mathematicians Land Top Spot in New Ranking of Best and Worst Occupations in the U.S.

By SARAH E. NEEDLEMAN

Nineteen years ago, Jennifer Courter set out on a career path that has since provided her with a steady stream of lucrative, low-stress jobs. Now, her occupation -- mathematician -- has landed at the top spot on a new study ranking the best and worst jobs in the U.S.

"It's a lot more than just some boring subject that everybody has to take in school," says Ms. Courter, a research mathematician at mental images Inc., a maker of 3D-visualization software in San Francisco. "It's the science of problem-solving."

The study, released Tuesday from CareerCast.com, a new job site, evaluates 200 professions to determine the best and worst according to five criteria inherent to every job: environment, income, employment outlook, physical demands and stress. (CareerCast.com is published by Adicio Inc., in which Wall Street Journal owner News Corp. holds a minority stake.)

The findings were compiled by Les Krantz, author of "Jobs Rated Almanac," based on data from the U.S. Bureau of Labor Statistics and the Census Bureau, as well as studies from trade associations and Krantz's own expertise.

CareerCast.com

- Income
- Employment outlook
- Physical demands
- Stress
- Environment

...rt because they ... indoors and in places free of toxic fumes or noise -- unlike those toward the ... bricklayer. They also aren't expected to do any heavy lifting, crawling or crouching -- attributes associated with occupations such as

... measuring each job's median income and growth potential. Mathematicians' annual income was pegged at \$94,160, but Ms. Courter,

... gns mathematically based computer programs, some of which have been used to make films such as "The Matrix" and "Speed Racer." ... time or feels stressed out. "Problem-solving involves a lot of thinking," says Ms. Courter. "I find that calming."

Other jobs at the top of the study's list include actuary, statistician, biologist, software engineer and computer-systems analyst, historian and sociologist.

CareerCast – Best jobs

<https://www.careercast.com/jobs-rated>

1. Statistician
2. Medical Services Manager
3. Operations Research Analyst
4. Information Security Analyst
5. Data Scientist
6. University Professor
7. Mathematician
8. Software Engineer
9. Occupational Therapist
10. Speech Pathologist

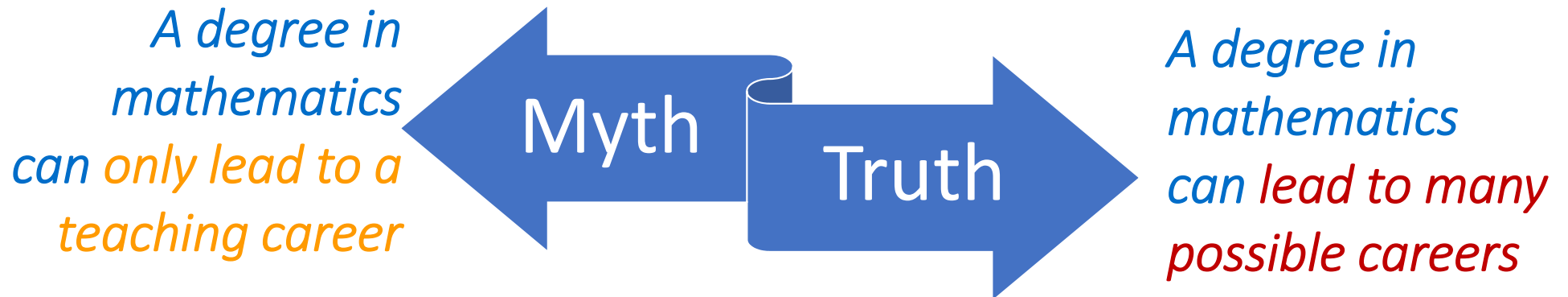
1. Genetic Counselor
2. Mathematician
3. University Professor
4. Occupational Therapist
5. Statistician
6. Medical Services Manager
7. Data Scientist
8. Information Security Analyst
9. Operations Research Analyst
10. Actuary

1. Data Scientist
2. Statistician
3. University Professor
4. Occupational Therapist
5. Genetic Counselor
6. Medical Services Manager
7. Information Security Analyst
8. Mathematician
9. Operations Research Analyst
10. Actuary

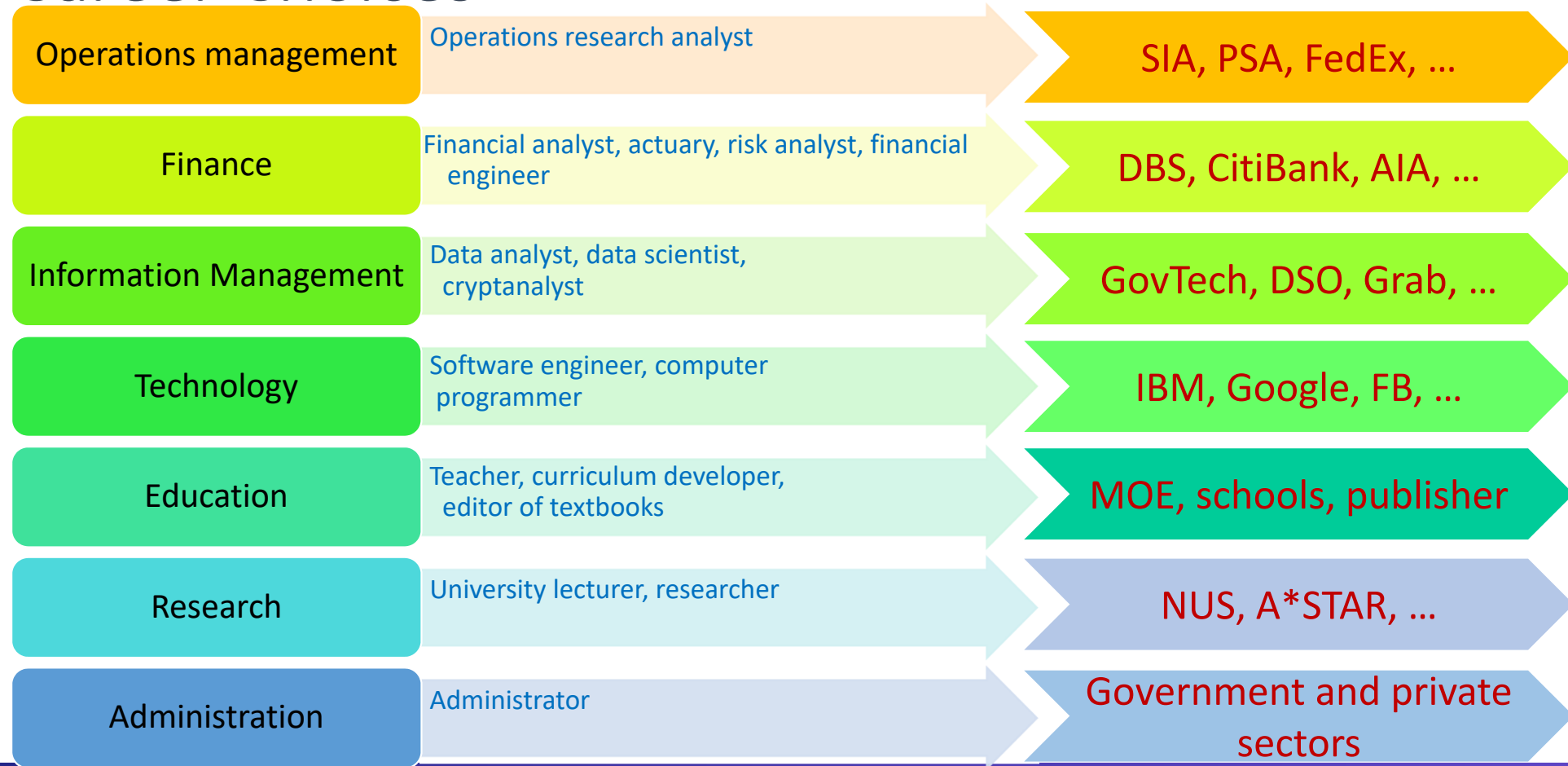
#2

Wide Range of Career Choices

Myth Versus Truth



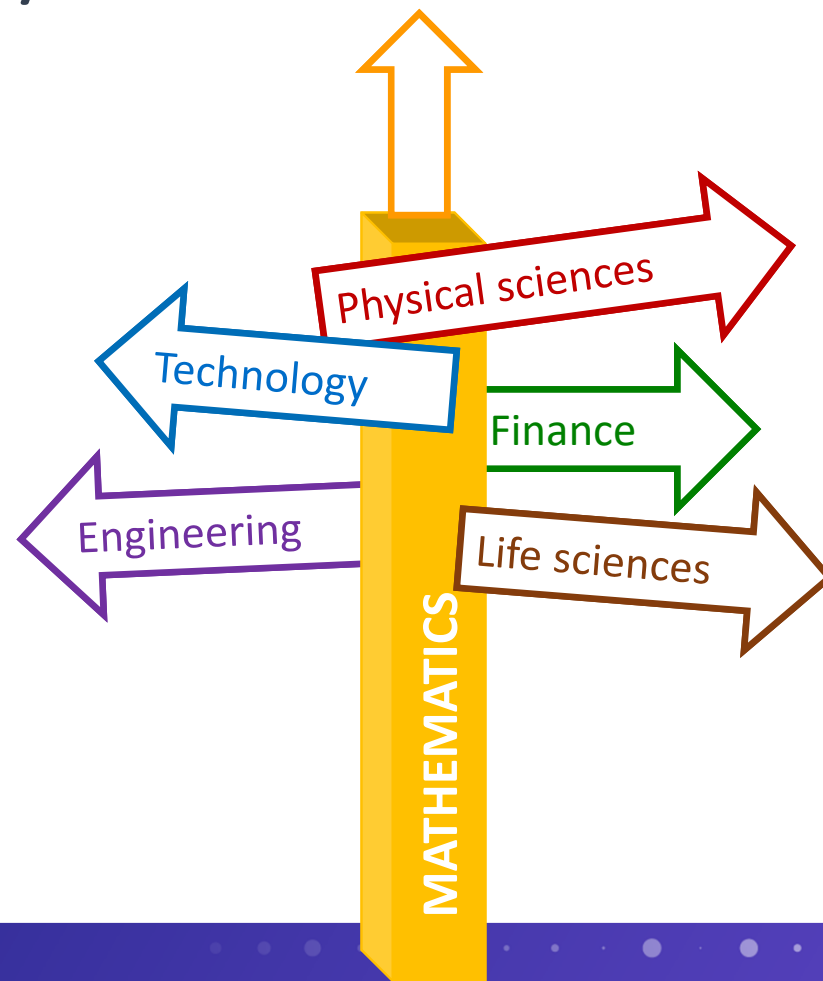
Career Choices



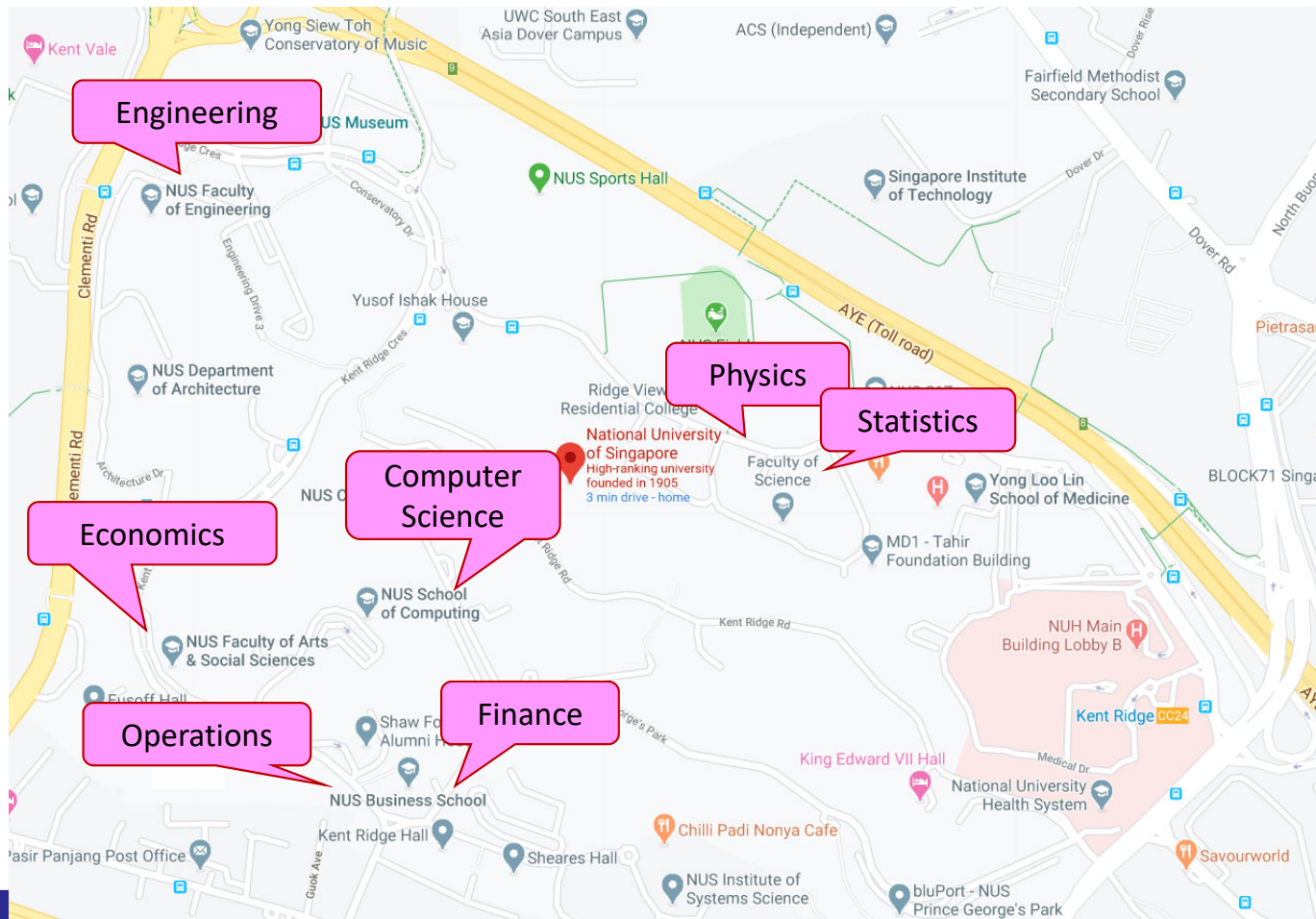
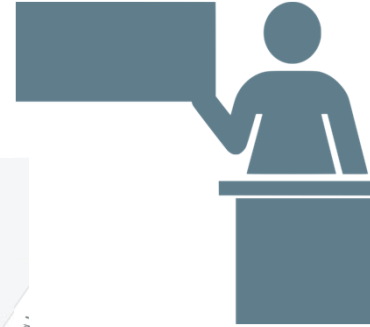
#3

Multiple Pathways

Paving the ways



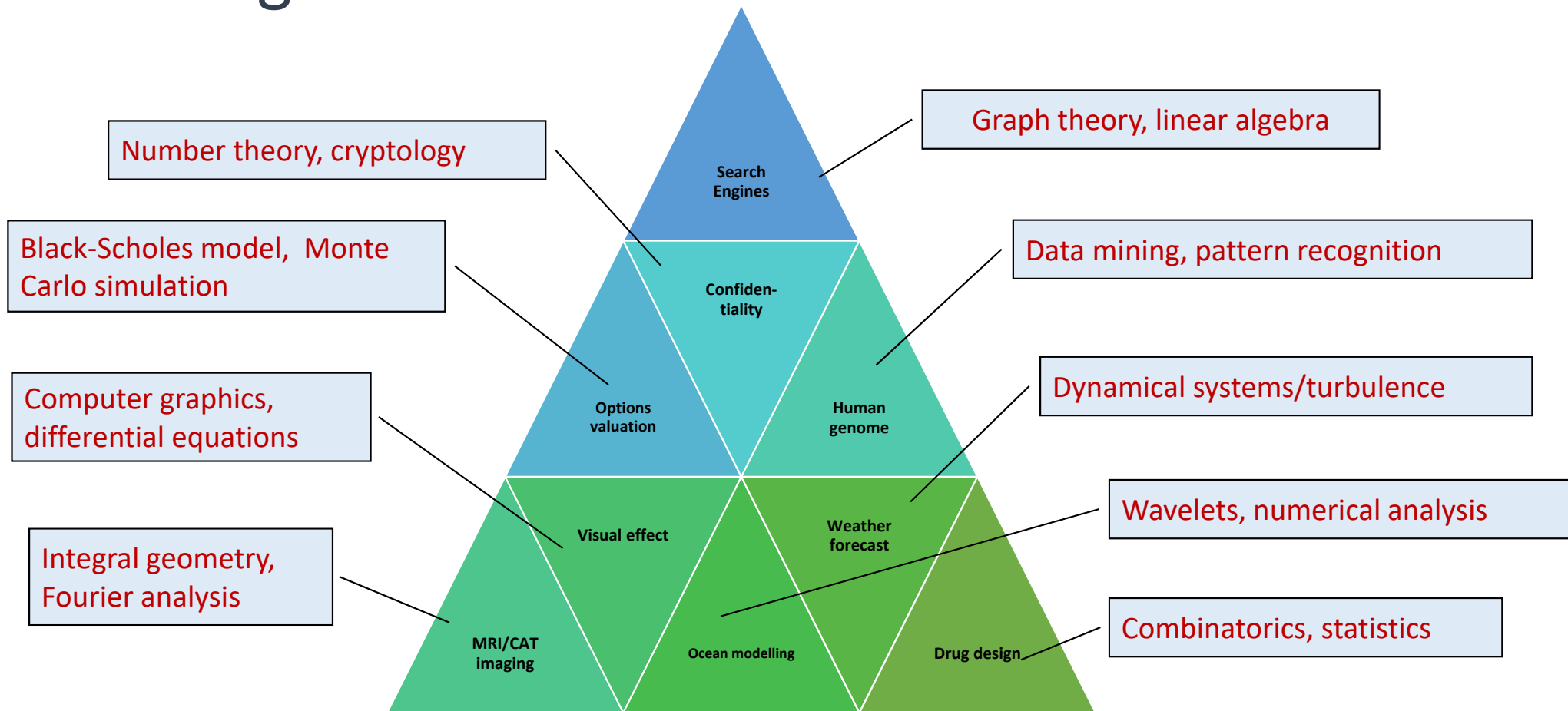
Professors in NUS Trained in Math



#4

Myriads of Real World Applications

Solving Real World Problems



Example: Search Engine

1

www.theguardian.com › books › jan › ian-stewart-top-10-popular-ma... ▼

[Ian Stewart's top 10 popular mathematics books | Books | The ...](#)

Jan 18, 2012 - Ian Stewart is an Emeritus Professor of **Mathematics** at Warwick University and a Fellow of the Royal Society. He has written over 80 **books**, ...

2

mathblog.com › mathematics-books ▼

[All The Math Books You'll Ever Need | Math ∞ Blog](#)

Abundantly filled with exercises, well chosen examples, and even biographies on notable **mathematicians**, this **book** makes the perfect companion for both ...

3

medium.com › however-mathematics › 13-classic-mathematics-books... ▼

[13 Classic Mathematics Books for Lifelong Learners - Medium](#)

Apr 25, 2018 - When I was a college student, I saw a list of essential **math books** on a blog. I promised to myself to read all those books in 10 years because ...

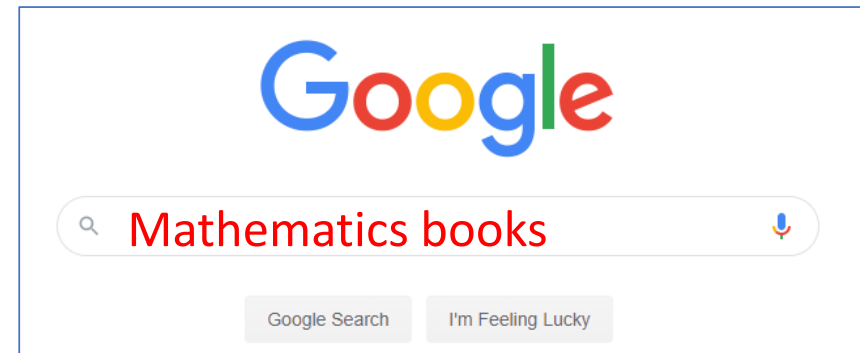
4

bookboon.com › mathematics-ebooks ▼

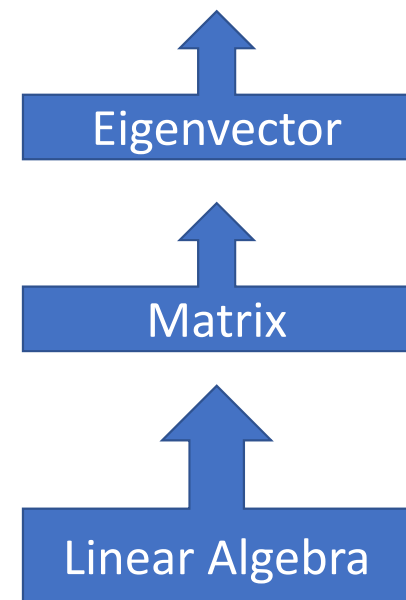
[Mathematics books for free | Math questions and answers](#)

Need help in **math**? Delve into **mathematical** models and concepts, limit value or engineering **mathematics** and find the answers to all your questions. It doesn't ...

[Mathematics Fundamentals](#) · [Essential Mathematics for ...](#) · [Statistics & Mathematics](#)



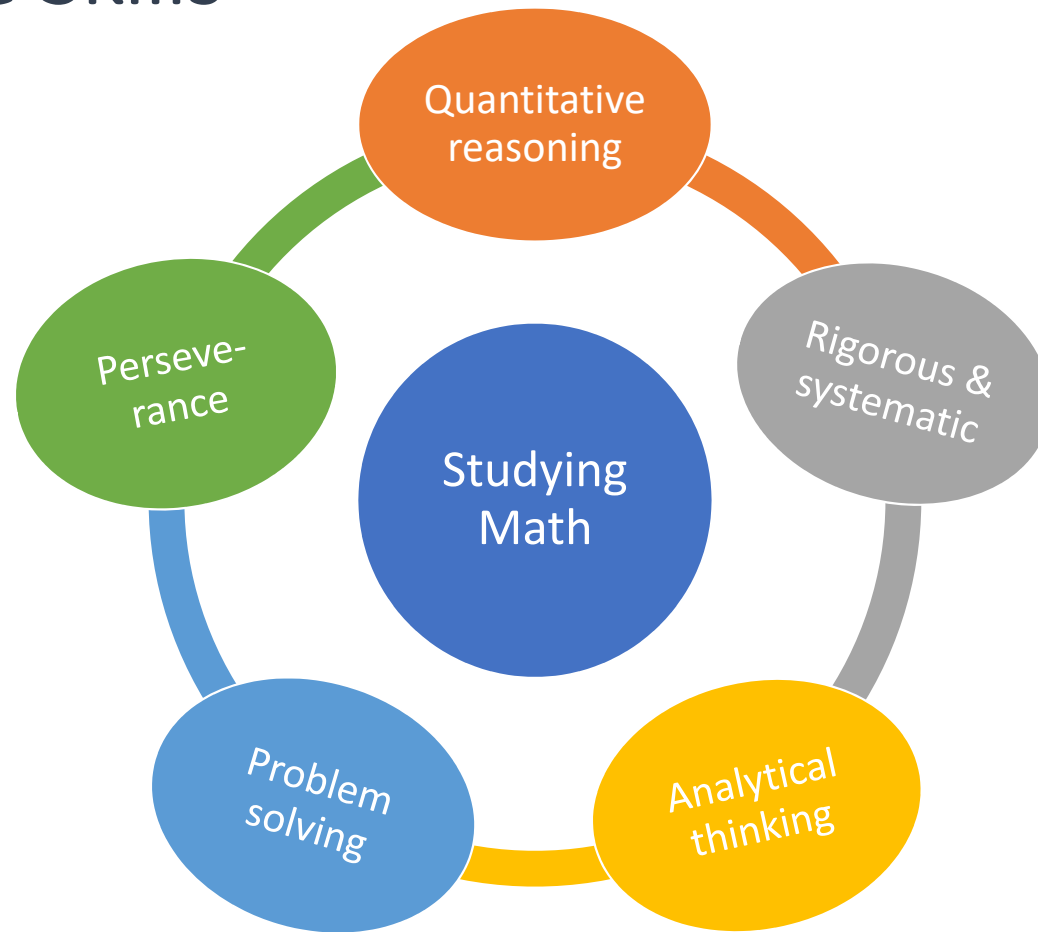
Google Page Rank



#5

Life Long Learning Skills

Intangible Skills



Successful people with degree



Steve Ballmer
Microsoft Former CEO



Sergey Brin
Google Co-founder



Reed Hastings
Netflix CEO



Indra Nooyi
CEO of PepsiCo



Eric Yuan
Zoom CEO



Mathematics Programme in NUS

Mathematics

Statistics

Quantitative Finance

Data Science and Analytics

Data Science and Economics

Mathematics Programme

4-year honours degree programme

How to apply?

Select “[NUS – Humanities & Sciences](#)” as one of your course of choices
Once accepted to CHS, you can declare Mathematics as major

You need a good H2 pass or equivalent in Mathematics or Further Mathematics.

Mathematics Programme

- Offers a wide range of pure and applied math modules and a broad spectrum of mathematical research activities
- Includes the study of mathematical methods and problem-solving techniques that are applied in science and other disciplines
- 3 Specializations (optional):
 - a. Data Modelling and Analytics
 - b. Operations Research and Analytics
 - c. Pure Mathematics

Math Module Requirement

1 Gateway Module

- MA1100 Basic Discrete Mathematics
- MA1100T Basic Discrete Mathematic

6 Essential Modules

- MA2001 Linear Algebra I
- MA2002 Calculus
- MA2101 Linear Algebra II
- MA2104 Multivariable Calculus
- MA2108 Mathematical Analysis I
- MA2116 Probability

1 Project Module

- MA4198 Capstone Project in Mathematics

7 Elective Modules (sample)

- MA3206 Set Theory
- MA3210 Mathematical Analysis II
- MA3211 Complex Analysis I
- MA3218 Applied Algebra
- MA3220 Ordinary Differential Equations
- MA3252 Linear and Network Optimization
- MA3259 Mathematical Methods in Genomics
- MA3236 Nonlinear Programming
- MA3264 Mathematical Modeling
- MA3265 Introduction to Number Theory
- etc

Math with Specialization

5 additional modules at 4000 level

Pure Mathematics

MA4203 Galois Theory
MA4207 Mathematical Logic
MA4221 Partial Differential Equations
MA4229 Fourier Analysis and Approximation
MA4262 Measure and Integration
MA4271 Differential Geometry in Curves and Surfaces
MA4273 Algebraic Geometry in Curves and Surfaces

Operations Research and Analytics

MA4235 Graph Theory
MA4251/ST4238 Stochastic Processes II
MA4254 Discrete Optimisation
MA4260 Stochastic Operations Research
MA4264 Game Theory
MA4270 Data Modelling & Computation

Data Modelling and Analytics

MA4229 Fourier Analysis & Approximation
MA4230 Matrix Computation
MA4255 Numerical Methods in Differential Equations
MA4261 Coding and Cryptography
MA4268 Mathematics for Visual Data Processing
MA4270 Data Modelling & Computation

DDP and DMP

Many other DDP/DMP combinations

- Double Degree Programme: Computer Science and MA

- Double Major Programmes:

MA + Second Major

Management (Biz)

Business Analytic (SoC)

Computer Science (SoC)

Information Security (SoC)

How to apply? Direct Admission

Select “NUS – Humanities & Sciences” as one of your course of choices
Then select DDP or DMP with your choice combinations

Special Programme in Mathematics

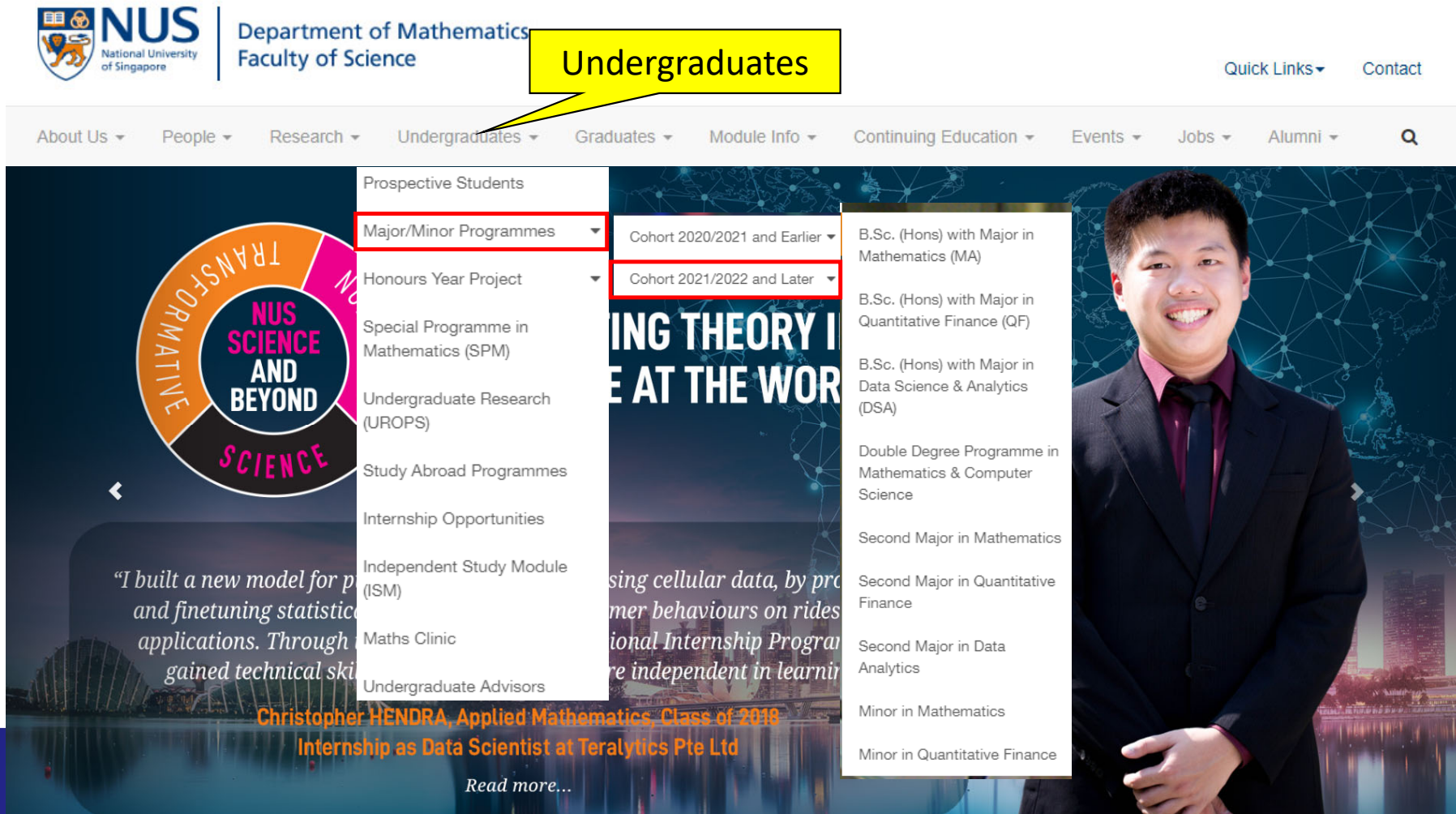
- For selected students with strong passion and aptitude in mathematics.
- Provides in-depth study and rigorous training through specially designed modules and close mentorship.
- Students will build a firm foundation to pursue graduate programmes and future careers in the mathematical sciences

How to apply?

Not through university admission exercise

Apply from Semester 2 of the first academic year

Visit Our Website



The screenshot shows the website of the Department of Mathematics, Faculty of Science at the National University of Singapore (NUS). A yellow callout box with the text "Undergraduates" points to the "Undergraduates" link in the top navigation bar. The "Undergraduates" dropdown menu is open, showing various options. The "Major/Minor Programmes" option is highlighted with a red box, and its sub-menu is also open, showing two cohorts: "Cohort 2020/2021 and Earlier" and "Cohort 2021/2022 and Later", both highlighted with red boxes. The sub-menu lists several programs, including B.Sc. (Hons) with Major in Mathematics (MA), B.Sc. (Hons) with Major in Quantitative Finance (QF), B.Sc. (Hons) with Major in Data Science & Analytics (DSA), Double Degree Programme in Mathematics & Computer Science, Second Major in Mathematics, Second Major in Quantitative Finance, Second Major in Data Analytics, Minor in Mathematics, and Minor in Quantitative Finance. On the left side of the page, there is a circular graphic with the text "TRANSFORMATIVE SCIENCE" and "NUS SCIENCE AND BEYOND". Below this, there is a quote from Christopher HENDRA, Applied Mathematics, Class of 2018, who interned as a Data Scientist at Teralytics Pte Ltd. The quote reads: "I built a new model for p and finetuning statisti applications. Through gained technical ski". Below the quote, there is a link to "Read more...".

NUS National University of Singapore

Department of Mathematics
Faculty of Science

Undergraduates

Quick Links Contact

About Us People Research Undergraduates Graduates Module Info Continuing Education Events Jobs Alumni

Prospective Students

Major/Minor Programmes

Honours Year Project

Special Programme in Mathematics (SPM)

Undergraduate Research (UROPS)

Study Abroad Programmes

Internship Opportunities

Independent Study Module (ISM)

Maths Clinic

Undergraduate Advisors

Cohort 2020/2021 and Earlier

Cohort 2021/2022 and Later

B.Sc. (Hons) with Major in Mathematics (MA)

B.Sc. (Hons) with Major in Quantitative Finance (QF)

B.Sc. (Hons) with Major in Data Science & Analytics (DSA)

Double Degree Programme in Mathematics & Computer Science

Second Major in Mathematics

Second Major in Quantitative Finance

Second Major in Data Analytics

Minor in Mathematics

Minor in Quantitative Finance

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E AT THE WOR

"I built a new model for p and finetuning statisti applications. Through gained technical ski

Christopher HENDRA, Applied Mathematics, Class of 2018
Internship as Data Scientist at Teralytics Pte Ltd

Read more...

OPEN HOUSE

PUBLIC LECTURE



Arthur Benjamin

Harvey Mudd College, USA



Department of Mathematics
Faculty of Science

RESIDENTIAL
COLLEGE 4
National University of Singapore

Secrets of Mental Math

An astonishing performance of Magical Mathematics

Thursday, 23 March 2023
7.00–9.00pm

Admission free. Refreshments provided.
Register at
<https://tinyurl.com/ABNUS2023>

Venue

Ngee Ann Kongsi Auditorium
University Town
National University of Singapore
Education Resource Centre, Level 2



"He talks like a performer, acts like a magician and multiplies faster than a calculator"

– Los Angeles Times



College of Humanities
and Sciences

Join us in person on Saturday 4 March 2023 @ NUS UTown

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HOUSE
27TH
FEBRUARY
2023

Meet our program advisors F2F

Hall 2, Stephen Riady Centre, Level 1

Math and QF Programme Talks

NUS Town Plaza Seminar Rooms 1 to 4

- 3.00 PM: Mathematics
- 4.00 PM: Quantitative Finance

Homepage of
Department of Mathematics



Email:
AskMathUG@nus.edu.sg