Math in NUS: A Door that Opens to Many Possibilities

Professor Victor Tan Dept of Mathematics



Questions?

Ask them during our Q&A Session or contact us!



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5 Reasons to Study Mathematics

#1 Finding Good Jobs

Doing the Math to find the Good Jobs



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 we

iled by Les Krantz, author of "Jobs Rated Almanac,"

with the contraction of Labor Statistics and the Census Bureau, as well as studies from trade

Income

- **Employment outlook**
- Physical demands
- Stress
- **Environment**

CareerCast.com

ndoors 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."

Uther 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

- Statistician 2. Medical Services
 - Manager
- 3. Operations Research **Analyst**
- 4. Information Security Analyst

Data Scientist

- 8. Software Engineer
- 9. Occupational Therapist

10. Speech Pathologist

6. University Professor Mathematician

Mathematician **University Professor**

Statistician

Occupational Therapist

Genetic Counselor

- **Medical Services** Manager
- **Data Scientist**

10. Actuary

- Information Security Analyst
- **Operations Research** Analyst

2. Statistician

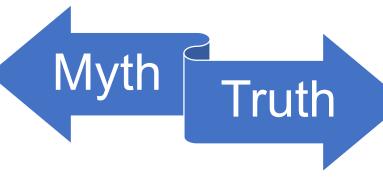
1. Data Scientist

- 3. University Professor
- Occupational Therapist 5. Genetic Counselor
- 6. Medical Services Manager 7. Information Security
- Analyst
- Mathematician
- 9. Operations Research Analyst
- 10. Actuary

#2
Wide Range of
Career Choices

Myth Versus Truth

A degree in mathematics can only lead to a teaching career



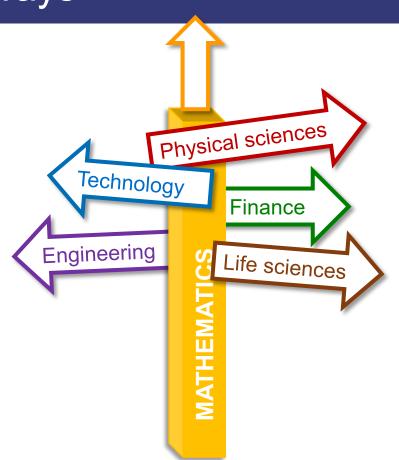
A degree in mathematics can lead to many possible careers

Career Choices

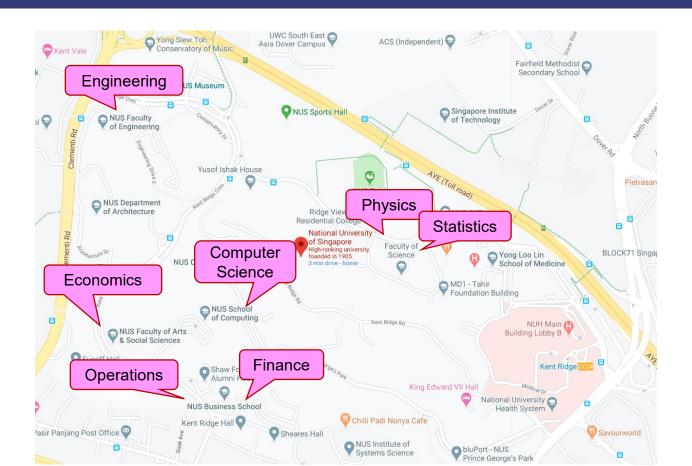
Operations management	Operations research analyst	SIA, PSA, FedEx,
Finance	Financial analyst, actuary, risk analyst, financial engineer	DBS, CitiBank, AIA,
Information Management	Data analyst, data scientist, cryptanalyst	GovTech, DSO, Grab,
Technology	Software engineer, computer programmer	IBM, Google, FB,
Education	Teacher, curriculum developer, editor of textbooks	MOE, schools, publisher
Research	University lecturer, researcher	NUS, A*STAR,
Administration	Administrator	Government and private sectors

#3 Multiple Pathways

Paving the ways

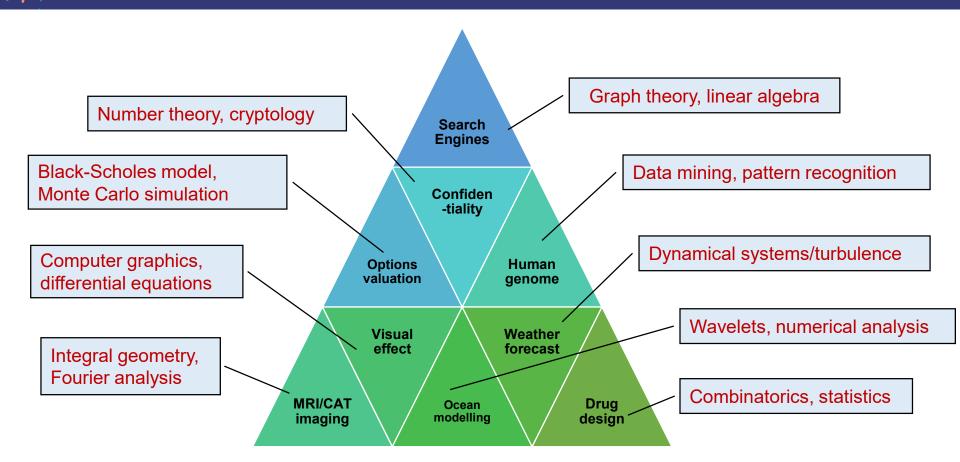


Professors in NUS Trained in Math



#4 Myriads of Real World Applications

Solving Real World Problems



Example: Search Engine

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**, ...

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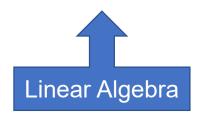
Mathematics Fundamentals · Essential Mathematics for ... · Statistics & Mathematics





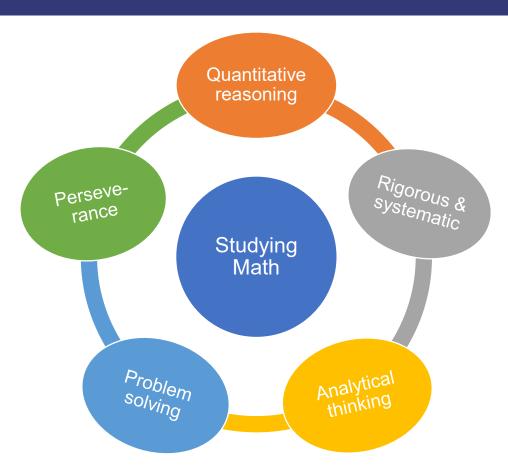




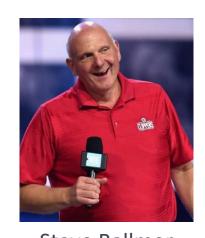


#5 Life Long Learning Skills

Intangible Skills



Successful people with math 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 Programme

4 years 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/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
- 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



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

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

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

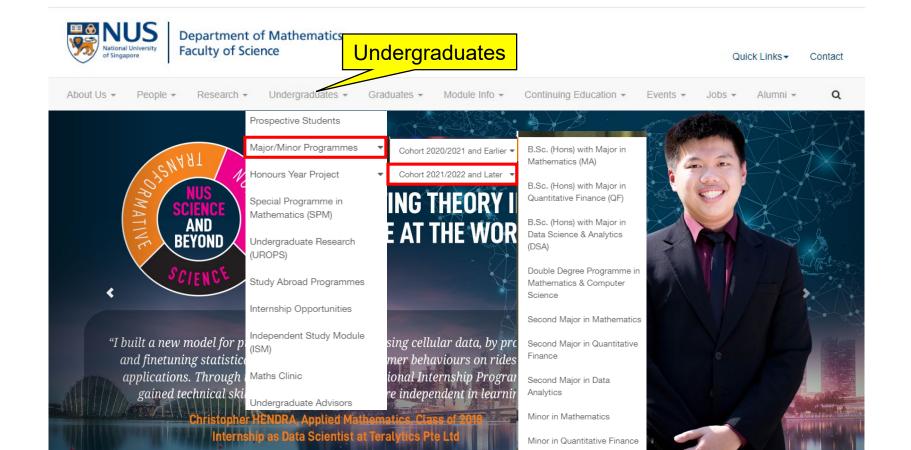
- For selected students with strong passion and aptitude in mathematics.
- Provides in-depth study and rigorous training through specially designed modules and close mentorship.
- Students will build a firm foundation to pursue graduate programmes and future careers in the mathematical sciences

How to apply?

Not through university admission exercise
Apply from Semester 2 of the first academic year

Visit Our Website

https://www.math.nus.edu.sg/



Thank You

In person Masterclass

@NUS LT27

March 5, 1.15pm



Email: <u>AskMathUG@nus.edu.sg</u>
Homepage of
Department of Mathematics

