

Master of

STATISTICS *Rejuvenating skills of professionals in statistical analysis*

Professional views 2447 856.75 Advanced knowledge

Apply now for entry in September 2022



Data mining IIQ

Social network

Spatial data analysis



Blockchain data analytics





Marketing analytics

SCIENCE CREATES KNOWLEDGE

IS THE PROGRAMME FOR YOU

- Be a knowledgeable statistician in principles and practice
- Experience hands-on applications of methodologies with powerful statistical software
- Could select 4 electives from the Department's research postgraduate courses
- Join the programme of more than 30 years in curriculum development and delivery
- Select a theme of your interest (Risk Management / Data Analytics)

World-class Rankings of HKU



- Advanced knowledge in statistics and practical skills of applying appropriate statistical models and techniques, and developing new knowledge and skills through life-long learning
- ♦ Hands-on training in statistical and risk analyses using commercial software, enhancing competency in data analytic jobs which require advanced computational skills
- Critically evaluates and makes proper use of models and techniques for data analyses and risk management, and appraises related ethical issues



Strongly tied with international professional bodies in statistics and actuarial science, the Department of Statistics and Actuarial Science (SAAS) enjoys a very high profile in both teaching and research. SAAS research areas span from classical areas of statistics, to a range of applied domains, and the rapidly developing areas of big data and artificial intelligence. In addition to the HKU-TCL Joint Research Centre for Artificial Intelligence, the SAAS Data Science Lab has been established to serve as platform for interdisciplinary research.

Learning hours: 1,500 hours* (including 120-180 hours for project (for students taking STAT8002

Review course on basic probability and statistics concepts to solidify students' conceptual understanding

· Workshop in SAS for all the students who need to rejuvenate their skills in data management using SAS



IS THE PROGRAMME FOR YOU

Where will this Programme Lead You

Transferable skills

- ♦ Equips students to make informed decisions on complex real-life problems encountered in the data explosion era
- ♦ Students will be able to communicate effectively with the layman on statistical issues
- ♦ Emphasises in applications and aims to prepare candidates for further study, research, consulting work and administration in various fields through computer-aided and hands-on experience

Career development

♦ To nurture confident statisticians who are able to provide professional views on statistical issues

"The COVID-19 pandemic served to accelerate the shift of consumers from physical stores to web-and-app based options. With millions of customers using this products, Statisticians, Mathematicians, and Data Scientists with the know-how to interpret the trends of shoppers are in ever-growing demand."

- The 2021 Jobs Rated Report by www.careercast.com

"Integration of statistical inference principles as part of Big Data will be essential to resolve these (big data) challenges."

> -Extracted from the Federal Big Data Research and Development Strategic Plan by the Executive Office of the President, USA

Scholarships

Master of Statistics Outstanding Performance Scholarship

One scholarship of HK\$50,000 shall be awarded annually to an Master of Statistics (MStat) student on the basis of academic merit and quality of coursework.

Lifelong Learning Prizes in Statistics Scholarship

There are Lifelong Learning Prizes in Statistics, each from HK\$5,000 to HK\$10,000, awarded to students on the basis of academic achievement.

Entrance Scholarship for the Master of Statistics

There is an Entrance Scholarship for Master of Statistics of HK\$20,000, awarded annually to new MStat students on the basis of academic merit, financial need upon admission and, if necessary, interview performance.

Targeted Taught Postgraduate Programmes Fellowships Scheme

Master of Statistics is selected as an eligible programme under the University Grants Committee for Targeted Taught Postgraduate Programmes Fellowships Scheme. Selected local students admitted to the MStat (full-time or part-time) in the academic year 2022-23 are eligible to apply (with terms and conditions apply).

Local offer recipients who wish to apply for the Fellowship Scheme should prepare a proposal on how they can contribute to the priority areas (i.e. Business and STEM) of Hong Kong after completing MStat. Successful Fellowship Scheme applicants will each receive an award of HK\$120,000.

Reimbursable Courses by Continuing Education Fund (CEF)*

5 courses in the programme have been included in the list of reimbursable courses under the CEF:

- ♦ STAT7006 Design and analysis of sample surveys
- ♦ STAT8007 Statistical methods in economics and finance
- ♦ STAT8015 Actuarial statistics
- ♦ STAT8017 Data mining techniques
- ♦ STAT8019 Marketing analytics

All CEF applicants are required to attend at least 70% of the courses before they are eligible for fee reimbursement under the CEF.

*The mother programme (Master of Statistics) of these courses is recognised under the Qualifications Framework (QF Level 6)

Targeted students



Those who wish to advance their quantitative and analytical skills to prepare for a datafocused career path

Those who wish to pursue further study in the field of statistics after studying science, social sciences, engineering, medical sciences, information systems, business and finance in their undergraduate studies

Examples of backgrounds of admitted students in recent years:

HKSAR Government departments/units: Private companies:

- ◊ Statistician ♦ Statistical Assistant
- ♦ Research Manager
- ♦ Economist

Education profession:

♦ Teacher

Senior Consultant Senior Credit Risk Officer Data Analyst Consultant, Data Analytics Engineering Assistant

- ♦ Research Officer
- ♦ Research Assistant
- ♦ Senior Lecturer

Hospital Authority/ Private clinics:

- ♦ Associate Consultant
- ♦ Senior Statistical Officer
- ♦ Senior Medical Officer

Associate Director Technical Service Delivery Manager Senior Marketing Executive Asset Management Analyst

Banking and finance profession:

- ♦ Manager, Market Risk and Liquidity Modeling

- Manager ♦ Assistant Portfolio Manager

Hear from our graduates

Tsz Kin MO, Class of 2021 Assistant Secretary, HKSARG Immigration Department



The MStat programme is an eye opener. I learnt the application of Statistics in areas not limited to Finance, but also interesting fields including geography, computer science and social economics. Though I might not have much background in those fields, I was able to understand and dig deep with the help of instructors, who made use of the statistical theories and models to explain some hot topics nowadays. MStat programme allows me to explore Statistics with fun and it has deepened my interest in further study. I would also like to thank all the staff for their effort in providing qualified teaching and learning experience amid the difficult pandemic times.

My two-year part-time study in MStat has been very fruitful and rewarding, preparing me for my career and beyond. Having worked in the financial sector for some time, I have seen firsthand how important it is to have a statistical mindset, and the MStat programme has been very fulfilling in this regard. Not only did it provide me with the analytical and quantitative skill sets required to navigate the age of Big Data, it also has deep coverage on the theoretical aspects underlying the statistical techniques used. A significant proportion of the coursework also focuses on real-life applications, so students of this programme can expect to bring immediate impact on their jobs.

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♦ Senior Traded Risk Analytics

- ◊ Data Scientist
- ♦ Equity Research Associate
- ♦ Equity Sales Analyst
- ♦ Senior Business Analyst
- ♦ Quantitative Analyst
- ♦ Quantitative Developer
- ♦ System Analyst/ Programmer
- ♦ Senior Business Intelligence Analyst
- ♦ Senior Development Specialist
- ♦ Forensic Technology Associate
- ♦ Associate (Risk Management)
- ♦ Application Consultant
- ♦ Securities Lending Trader

Kwan Wah CHAN, Class of 2020 Associate Director, UBS Group AG



Design of curriculum (60 credits)

Compulsory courses	
12 credits	
STAT7101 Fundamentals of statistical inference (6 credits) STAT7102 Advanced statistical modelling (6 credits)	
Students with prior background have to take a more advanced course from the same area as replacement:	
REPLACE	WITH
STAT7101 Fundamentals of statistical inference (6 credits)	STAT6009 Research methods in statistics (6 credits) or STAT7005 Multivariate methods (6 credits)
STAT7102 Advanced statistical modelling (6 credits)	Any other course

Theme-specific elective courses

Data Analytics theme	
plus 24 credits from	
STAT6011 Computational statistics (6 credits)	
STAT6016 Spatial data analysis (6 credits)	
STAT7005 Multivariate methods (6 credits)	
STAT7007 Categorical data analysis (3 credits)	
STAT7008 Programming for data science (6 credits)	
STAT8003 Time series forecasting (6 credits)	
STAT8016 Biostatistics (6 credits)	
STAT8017 Data mining techniques (6 credits)	
STAT8019 Marketing analytics (6 credits)	
STAT8021 Big data analytics (6 credits)	
STAT8302 Structural equation modelling (3 credits)	
STAT8305 Bayesian statistics (3 credits)	

Other elective courses

STAT8306 Statistical methods for network data (3 credits)

plus at least 18 credits from

STAT6009 Research methods in statistics (6 credits) STAT6010 Advanced probability (6 credits) STAT6019 Current topics in statistics (6 credits) STAT7006 Design and analysis of sample surveys (6 credits) STAT7301 Socio-economic statistics for business and public policies (3 credits) STAT8000 Workshop on spreadsheet modelling and database management (3 credits) STAT8300 Career development and communication workshop (Non-credit-bearing) Any theme-specific elective courses Any capstone courses

Capstone requirement

plus 6 credits from

STAT8002 Project (6 credits) STAT8017 Data mining techniques (6 credits) STAT8088 Practicum (6 credits) STAT8089 Capstone project (6 credits)

Remarks:

- 1. Apart from the 2 compulsory courses and capstone requirement, candidates may choose not to follow any theme and may take 42 credits of elective courses in any order, whenever feasible.
- 2. A student may choose to have his/her theme printed on the transcript if he/she has satisfied the requirement of one of the themes.

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- 3. If a student selects an MStat course whose contents are similar to a course (or courses) which he/she has taken in his/her previous study, the Department may not approve the selection in question.
- 4. The programme structure will be reviewed from time to time and is subject to change

Compulsory Courses

STAT7101 Fundamentals of statistical inference This course provides an introduction to measure Motivated by real problems involving uncertainty and theory and probability. The course will focus on some variability, this course introduces the basic concepts and basic concepts in theoretical probability which are principles of statistical inference and decision-making. important for students to do research in actuarial Contents include: large-sample theories; estimation science, probability and statistics. Contents include: theory; likelihood principle; maximum likelihood sigma-algebra, measurable space, measure and estimation; hypotheses testing; likelihood ratio tests; probability, measure space and probability space, measurable functions, random variables, integration nonparametric inference; computer-intensive methods such as EM algorithm and bootstrap methods. (Only theory, characteristic functions, convergence of random under exceptional academic circumstances can this variables, conditional expectations, martingales. compulsory course be replaced by an elective course)

STAT7102 Advanced statistical modelling

This course aims to give postgraduate students in This course introduces modern methods for statistics a background in modern computationally constructing and evaluating statistical models and their intensive methods in statistics. It emphasises the role of implementation using popular computing software, computation as a fundamental tool of discovery in data such as R or Python. It will cover both the underlying analysis, of statistical inference, and for development principles of each modelling approach and the of statistical theory and methods. Contents include: model estimation procedures. Topics from: (i) Linear Bayesian statistics, Markov chain Monte Carlo methods regression models; (ii) Generalised linear models; (iii) including Gibbs sampler, the Metropolis-Hastings Model selection and regularisation; (iv) Kernel and algorithm, and data augmentation; Generation of random local polynomial regression; selection of smoothing variables including the inversion methods, rejection parameters; (v) Generalised additive models; (vi) Hidden sampling, the sampling/importance resampling Markov models and Bayesian networks. method; Optimisation techniques including Newton's method, expectation-maximisation (EM) algorithm **Elective Courses** and its variants, and minorisation-maximisation (MM) algorithms; Integration including Laplace approximations, Gaussian quadrature, the importance sampling method, Numerical optimisation and integration, EM algorithm and its variants, Simulation and Monte Carlo integration, Importance sampling and variance reduction techniques; and other topics such as Hidden Markov models, neural networks, and Bootstrap methods.

STAT6009 Research methods in statistics

This course introduces some statistical concepts and methods which potential graduate students will find useful in preparing for work on a research degree in statistics. Focus is on applications of state-of-theart statistical techniques and their underlying theory. Contents may be selected from: (1) Basic asymptotic methods: modes of convergence; stochastic orders; laws of large numbers; central limit theorems; delta method; (2) Parametric and nonparametric likelihood methods: high-order approximations; profile likelihood and its variants; signed likelihood ratio statistics; empirical likelihood; (3) Nonparametric statistical inference: sign and rank tests; Kolmogorov-Smirnov test; nonparametric regression; density estimation; kernel methods; (4) Computationally-intensive methods: cross-validation: bootstrap: permutation methods: (5) Robust methods: measures of robustness; M-estimator; L-estimator; R-estimator; estimating functions; (6) Other topics as determined by the instructor.

STAT6010 Advanced probability

STAT6011 Computational statistics



STAT6013 Financial data analysis

This course aims at introducing statistical methodologies in analysing financial data. Financial applications and statistical methodologies are intertwined in all lectures. Contents include: recent advances in modern portfolio theory, copula, market microstructure, stochastic volatility models and high frequency data analysis.

STAT6015 Advanced quantitative risk management

This course covers statistical methods and models of risk management, especially of Value-at-Risk (VaR). Contents include: Value-at-risk (VaR) and Expected Shortfall (ES); univariate models (normal model, lognormal model and stochastic process model) for VaR and ES; models for portfolio VaR; time series models for VaR; extreme value approach to VaR; back-testing and stress testing.



STAT6016 Spatial data analysis

This course covers statistical concepts and tools involved in modelling data which are correlated in space. Applications can be found in many fields including epidemiology and public health, environmental sciences and ecology, economics and others. Covered topics include: (1) Outline of three types of spatial data: pointlevel (geostatistical), areal (lattice), and spatial point process. (2) Model-based geostatistics: covariance functions and the variogram; spatial trends and directional effects; intrinsic models; estimation by curve fitting or by maximum likelihood; spatial prediction by least squares, by simple and ordinary kriging, by trans-Gaussian kriging. (3) Areal data models: introduction to Markov random fields; conditional, intrinsic, and simultaneous autoregressive (CAR, IAR, and SAR) models. (4) Hierarchical modelling for univariate spatial response data, including Bayesian kriging and lattice

modelling. (5) Introduction to simple spatial point processes and spatio-temporal models. Real data analysis examples will be provided with dedicated R packages such as geoR.

STAT6017 Operational risk and insurance analytics

This course aims to provide the foundation of operational risk management and insurance. Special emphasis will be put on the analytical and modelling techniques for operational risk and insurance. Contents include fundamentals of operational risk and Basel regulation, loss distribution, estimation of risk models, copula and modelling dependence, insurance and risk transfer for operational risk.

STAT6019 Current topics in statistics

This course includes two modules.

The first module, Causal Inference, is an introduction to key concepts and methods for causal inference. Contents include 1) the counterfactual outcome, randomised experiment, observational study; 2) Effect modification, mediation and interaction; 3) Causal graphs; 4) Confounding, selection bias, measurement error and random variability; 5) Inverse probability weighting and the marginal structural models; 6) Outcome regression and the propensity score; 7) The standardisation and the parametric g-formula; 8) G-estimation and the structural nested model; 9) Instrumental variable method; 10) Machine learning methods for causal inference; 11) Other topics as determined by the instructor.

The second module, Posterior Inference and Simulation, cover topics from: 1) Large-sample properties of posterior distribution; 2) Langevin dynamics and Hamiltonian MCMC; 3) Sequential Monte Carlo methods; 4) Approximation Bayesian computation; 5) Variational Bayesian methods; 6) Other topics as determined by the instructor.

STAT7005 Multivariate methods

In many disciplines the basic data on an experimental unit consist of a vector of possibly correlated measurements. Examples include the chemical composition of a rock; the results of clinical observations and tests on a patient; the household expenditures on different commodities. Through the challenge of problems in a number of fields of application, this course considers appropriate statistical models for explaining the patterns of variability of such multivariate data. Topics include: multiple, partial and canonical correlation; multivariate regression; tests on means for one-sample and twosample problems; profile analysis; test for covariances structure; multivariate ANOVA; principal components analysis; factor analysis; discriminant analysis and classification.

STAT7006 Design and analysis of sample surveys

Inferring the characteristics of a population from those observed in a selection or sample from that population is a situation often forced on us for economic, ethical or technological reasons. Against the background of practical situations, this course considers the basic principles, practice and design of sampling techniques to produce objective answers free from bias. Emphasis will be on current and local problems.

STAT7007 Categorical data analysis

Many social and medical studies, especially those involving questionnaires, contain large amounts of categorical data. Examples of categorical data include presence or absence of disease (yes / no), mode of transportation (bus, taxi, railway), attitude toward an issue (strongly disagree, disagree, agree, strongly agree). This course focuses on analysing categorical response data with emphasis on hands-on training of analysing real data using statistical software SAS. Consulting experience may be presented in the form of case studies. Topics include: classical treatments of contingency tables; measures of association; logistic linear models and log-linear models for binary responses; and log-linear models for Poisson means.



STAT7008 Programming for data science

In the big data era, it is very easy to collect huge amounts of data. Capturing and exploiting the important information contained within such datasets poses a number of statistical challenges. This course aims to provide students with a strong foundation in computing skills necessary to use R or Python to tackle some of these challenges. Possible topics to be covered may include exploratory data analysis and visualisation, collecting data from a variety of sources (e.g. Excel, web-scraping, APIs and others), object-oriented programming concepts and scientific computation tools. Students will learn to create their own R packages or Python libraries.



STAT7301 Socio-economic statistics for business and public policies

Huge volumes of socio-economic statistics are compiled and published on society and the economy by Governments and other bodies locally and elsewhere. Strong ability of business managers and authorities concerned to make effective reference to relevant data greatly enhances the quality of decision making in business and public policy processes. Students will learn about globally adopted standards for the compilation and dissemination of important data, such as those on population, labour, economic structure (in particular GDP), productivity, prices, trade, finance, housing, health and education; how to obtain them; and appropriate methods of utilising them for the purposes of understanding socio-economic phenomena and making sound decisions. Ample practical examples drawn from Hong Kong and elsewhere will be presented.

STAT8000 Workshop on spreadsheet modelling and database management

This course aims to enhance students' IT knowledge and skills which are essential for career development of statistical and risk analysts. The course contains a series of computer hands-on workshops on Excel VBA programming, MS-Access and SQL and C++ basics.

STAT8002 Project

A project in any branch of statistics or probability will be chosen under the supervision of individual staff member. A substantial written report is required. Availability of this course is subject to approval.

STAT8003 Time series forecasting

A time series consists of a set of observations on a random variable taken over time. Such series arise naturally in climatology, economics, finance, environmental research and many other disciplines. In additional to statistical modelling, the course deals with the prediction of future behaviour of these time series. This course distinguishes different types of time series, investigates various representations for them and studies the relative merits of different forecasting procedures.



STAT8007 Statistical methods in economics and finance

This course provides a comprehensive introduction to state-of-the-art statistical techniques in economics and finance, with emphasis on their applications to time series and panel data sets in economics and finance. Topics include: regression with heteroscedastic and/ or autocorrelated errors; instrumental variables and two stage least squares; panel time series model; unit root tests, co-integration, error correction models; and generalised method of moments.

STAT8015 Actuarial statistics 🕍

The main focus of this module will be on financial mathematics of compound interest with an introduction to life contingencies and statistical theory of risk. Topics include simple and compound interest, annuities certain, yield rates, survival models and life tables, population studies, life annuities, assurances and premiums, reserves, joint life and last survivor statuses, multiple decrement tables, expenses, individual and collective risk theory.

STAT8016 Biostatistics

This course aims to introduce various statistical models Statistical methodologies and applications in fields and methodology used in marketing research. Special of medicine, clinical research, epidemiology, public emphasis will be put on marketing analytics and health, biology and biomedical research are considered. statistical techniques for marketing decision making The types of statistical problems encountered will be including market segmentation, market response motivated by experimental data sets. Important topics models, consumer preference analysis and conjoint include design and analysis of randomised clinical trials, analysis. Contents include market response models, group sequential designs and crossover trials; survival statistical methods for segmentation, targeting and studies; diagnosis; risks; statistical analysis of the positioning, statistical methods for new product design. medical process.

STAT8017 Data mining techniques 🖄

With the rapid developments in computer and data storage technologies, the fundamental paradigms of



Course Description

classical data analysis are mature for change. Data mining techniques aim at helping people to work smarter by revealing underlying structure and relationships in large amounts of data. This course takes a practical approach to introduce the new generation of data mining techniques and show how to use them to make better decisions. Topics include data preparation, feature selection, association rules, decision trees, bagging, random forests and gradient boosting, cluster analysis, neural networks, introduction to text mining.

STAT8019 Marketing analytics 🐔

STAT8020 Quantitative strategies and algorithmic trading

Quantitative trading is a systematic investment approach that consists of identification of trading opportunities via statistical data analysis and implementation via computer algorithms. This course introduces various methodologies that are commonly employed in quantitative trading.

The first half of the course focuses at strategies and methodologies derived from the data snapshotted at daily or minute frequency. Some specific topics are: (1) techniques for trading trending and meanreverting instruments, (2) statistical arbitrage and pairs trading, (3) detection of "time-series" mean reversion or stationarity, (4) cross-sectional momentum and contrarian strategies, (5) back-testing methodologies and corresponding performance measures, and (6) Kelly formula, money and risk management. The second half of the course discusses statistical models of high frequency data and related trading strategies. Topics that planned to be covered are: (7) introduction of market microstructure, (8) stylised features and models of high frequency transaction prices, (9) limit order book models, (10) optimal execution and smart order routing algorithms, and (11) regulation and compliance issues in algorithmic trading.



STAT8021 Big data analytics

The recent explosion of social media and the computerisation of every aspect of life resulted in the creation of volumes of mostly unstructured data (big data): web logs, e-mails, videos, speech recordings, photographs, tweets and others. This course aims to provide students with knowledge and skills of some advanced analytics and statistical modelling for solving

big data problems. Topics include recommender system, deep learning: CNN, RNN, LSTM, GRU, natural language processing, sentiment analysis and topic modelling. Students are required to possess basic understanding of Python language.

STAT8088 Practicum

This course is open to students of Master of Statistics Programme only. It provides students with first-hand experience in the applications of academic knowledge in a real-life work environment. To be eligible, students should be undertaking a statistics-related or riskmanagement-related practicum with no less than 160 hours in at least 20 working days spent in a paid or unpaid position. It is possible for part-time students to complete their practicum within their current place of employment. The practicum will normally take place in the second semester or summer semester for fulltime students or during the second year for part-time students.

STAT8089 Capstone project

This project-based course aims to provide students with capstone experience to work on a real-world problem and carry out a substantial data analysis project which requires integration of the knowledge they have learnt in the curriculum. Students will work in small groups under the guidance of their supervisor(s). The project topic is not limited to academic context, but can also be extended to a community or corporate outreach project. Students will need to find an interesting topic of their own, conduct literature search regarding the most recent research related to the problem, make suggestions to improve the current situations or even solve the problem identified in their project. A substantial written report is required.

STAT8300 Career development and communication workshop

The course is specially designed for students who wish to sharpen their communication and career preparation skills through a variety of activities including lectures, skill-based workshops, small group discussion and role plays. All of which aim to facilitate students in making informed career choices, provide practical training to enrich communication, presentation, time management and advanced interview skills, and to enhance students' overall competitiveness in the employment markets.



STAT8302 Structural equation modelling posterior distribution, posterior predictive, Bayes factor, Bayesian hypothesis testing, Bayesian hierarchical Structural Equation Modelling (SEM) is a general modelling, and Bayesian decision theoretic analysis. statistical modelling technique to establish relationships From the computational perspective, it covers rejection among variables. A key feature of SEM is that observed sampling, importance sampling, Metropolis-Hastings variables are understood to represent a small number algorithm, Gibbs sampling, and data augmentation of "latent constructs" that cannot be directly measured, MCMC techniques. Statistical software R and Python only inferred from the observed measured variables. will be used for Bayesian computation. This course covers the theories of structural equation models and their applications. Topics may include path models, confirmatory factor analysis, structural equation models with latent variables, Sub-models including multiple group analysis, MIMIC model, second order factor analysis, two-wave model, and simplex model, model fitness, model identification, and Comparison with competing models.

STAT8305 Bayesian statistics

This course introduces Bayesian methodologies and computational techniques of Markov chain Monte Carlo (MCMC). It covers fundamental Bayesian concepts, modelling and inference, including prior specification,



Course Description

STAT8306 Statistical methods for network data The six degrees of separation theorises that human interactions could be easily represented in the form of a network. Examples of networks include router networks, the World Wide Web, social networks (e.g. Facebook or Twitter), genetic interaction networks and various collaboration networks (e.g. movie actor coloration network and scientific paper collaboration network). Despite the diversity in the nature of sources, the networks exhibit some common properties. For example, both the spread of disease in a population and the spread of rumors in a social network are in sub-logarithmic time. This course aims at discussing the common properties of real networks and the recent development of statistical network models. Topics may include common network measures, community detection in graphs, preferential attachment random network models, exponential random graph models, models based on random point processes and the hidden network discovery on a set of dependent random variables.

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STAT8308 Blockchain data analytics

In this course, we start by studying the basic architecture of a blockchain. Then we move on to several major applications including (but not limited to) cryptocurrencies, fintech and smart contracts. We conclude by examining the cybersecurity issues facing the blockchain ecosystems.



The paradigm shift from traditional statistical techniques to big data analytics opens up new opportunities and challenges. There is no better time to be a statistician than now.

Programme Director Dr Zhiqiang ZHANG BSc Nankai; MSc E China Normal; PhD HK

Staff List

Dr A BENCHIMOL Dr Y CAO **Dr K C CHEUNG** Dr Y K CHUNG **Professor T W K FUNG** Dr C W KWAN Dr E K F LAM Dr A S M LAU Dr D LEE **Professor S M S LEE** Dr E A L LI **Professor G D LI** Dr Z H LIU Dr C WANG Dr K P WAT **DrJTYWONG DrJFXU Professor H L YANG** Professor J J F YAO **Professor G S YIN** Dr L Q YU **Professor K C YUEN Dr D Y ZHANG** Dr M M Y ZHANG Dr Z Q ZHANG Dr K ZHU

BSc UBA; MA UAH; MPhil, PhD UC3M BS Fudan; MS, PhD Princeton BSc(ActuarSc), PhD HK; ASA BSc, MPhil CUHK; PhD HK BSocSc HK: MSc Lond: PhD HK: DIC BSc. PhD HK BA St. Thomas; MA New Brunswick; PhD HK BEng City, MSc HK; PhD CUHK BSc(ActuarSc), MPhil HK; PhD British Columbia; ASA BA, PhD Cantab BSc HK; MEcon, PhD Syd BSc MSc Peking; PhD HK ScD Harvard PhD NUS BSc(ActuarSc), PhD HK; FSA;CERA; FRM BSc(ActuarSc), MPhil HK; PhD Waterloo; FSA BSc USTC; MPhil, PhD Columbia BSc Inner Mongolia; MMath Waterloo; PhD Alberta; ASA; HonFIA BSc, MSc, PhD Paris-Sud Orsay MA Temple; MSc, PhD N Carolina BEng ZJU; PhD CUHK BSc, MSc, PhD Calgary; ASA BSc Nankai; MSc, PhD NCSU BSc UCSB; MSc, PhD UT Austin BSc Nankai, MSc E China Normal; PhD HK BSc USTC; PhD HKUST



Admissions

Requirements

A Bachelor's degree with Honours, or an equivalent qualification, with knowledge of matrices and calculus, introductory statistics and linear modelling.

How to apply

Main Round Deadline: **12 noon, December 15, 2021 (GMT+8)** Clearing Round Deadline: **12 noon, January 31, 2022 (GMT+8)**

Online application



admissions.hku.hk/tpg/

Further Information

Programme details





Enquiries

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