KAZAKH KBTU BRITISH
TECHNICAL
UNIVERSITY

Инновационные подходы использования онлайн возможностей в образовательном процессе

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INTERNATIONAL SCHOOL OF ECONOMICS

Awarding Body

UNIVERSITY OF LONDON

Academic Direction

THE LONDON SCHOOL OF ECONOMICS AND POLITICAL SCIENCE

Двудипломные программы

Kazakh-British Technical University (KBTU) / International School of Economics and Social Sciences (ISE)

Local Teaching Centre

- 2005 г. Диплом КБТУ Университет Лондона.
- 2009 г. КБТУ Affiliate Center   Университет Лондона.
- 2020г RECOGNISED TEACHING CENTRE AGREEMENT FOR UNIVERSITY OF LONDON PROGRAMMES
- 2022г. Graduate Diploma Доступно только для официальных **Teaching Centre**
- Продолжительность обучения: 1 год (максимум) 5 лет.
- Для студентов, получивших Диплом бакалавра, имеющих международный сертификат IELTS и высокие баллы по высшей математике

Обучение в КБТУ → Программа LSE → Диплом UoL

research quality, teaching quality and student experience

Около 180 тысяч студентов в Великобритании

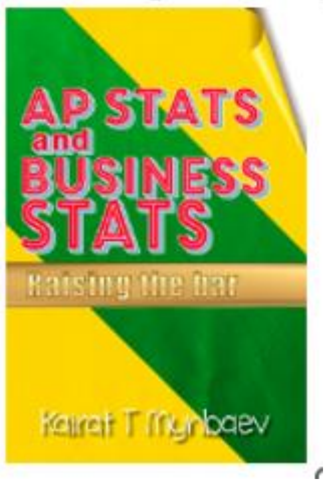
Около 50 тысяч студентов в других странах

Студенты МШЭ: сдают усиленные вступительные экзамены. По основным курсам сдают два экзамена: один в МШЭ, другой в Университете Лондона

С чего все начиналось ....

- 2015г. Textbook in Statistics: AP Stats and Business Stats: Raising the bar, Lulu Press, Inc., USA, 2015.
- 2017г. Создание сайта https://raisingthebar.nl/
- 6 курсов по двудипломной программе

1. Advanced Statistics
2. Basic Statistics
3. Econometrics
4. Matrix Algebra
5. Optimization
6. Quant Finance



7 разделов:

Базовая статистика
Эконометрика
Матричная алгебра
Оптимизация
Количественные финансы
Продвинутая статистика
Обзоры учебников

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April 15, 2017

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Question 1 from UoL exam 2016, Zone B, ... 17498

Очень сложный материал

... and level sets 8111

Generating Bernoulli random variable (coin) in Excel – Exercise 2.1 ... 4477

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2780

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- United States
- Netherlands
- Kazakhstan
- Poland
- Italy
- India
- Thailand
- European Union
- South Korea
- Singapore

етыре ссылки

Distribution function properties

category: dougherty introduction to econometrics, ec2020, ec2020 elements of econometrics, econometrics

4 comments

The word "distribution" is repeated in elementary Stats texts hundreds of times yet the notion of a distribution function is usually mentioned tangentially or not studied at all. In fact, the distribution function is as important as the density and in binary choice models it is the king. The full name is a *cumulative distribution function* (cdf) but I am going to stick to the short name (used in advanced texts). This is one of the topics most students don't get on the first attempt (I was not an exception).

Motivating example

Example. Electricity consumption sharply increases when everybody starts using air conditioners, and this happens when temperature exceeds $20\,^\circ C$. The utility company would like to know the likelihood of a jump in electricity consumption tomorrow at noon.

1. Consider the probability $P(T\le 15)$ that the temperature tomorrow at noon T will not exceed $15\,^\circ C$. How does it relate to the probability $P(T\le 20)$? The second probability is obviously larger, and this can be visualized by comparing the intervals $(-\infty,15]$ and $(-\infty,20]$.
2. Suppose in the expression $P(T\le t)$ the real number t increases to $+\infty$. What happens to the probability? As the intervals extend to the right, they eventually include all possible temperatures, and the probability $P(T\le t)$ approaches 1.
3. Now think about t going to $-\infty$. Then what happens to $P(T\le t)$? It's the opposite of the previous case. Eventually, all possible temperatures are excluded, and the probability $P(T\le t)$ goes to 0.

Generalization

Definition. Let X be a ra… of X is defined by $F_X(x)$… in the subscript, whereas …

Distribution function p…

function estimation

business stats, fn3142 quantitative finance, quantitative finance, statistics 2

no comme…

function estimation

…heory says that what initially looks absolutely difficult, on clos…

…ample, we denote by T the temperature outside and by t a cut-off valu… …vice provider is interested in knowing the probability $P(T\le t)$ f… of t. This is exactly the distribution function of temperatur… …t). So how do you estimate it?

…Fix som… …e does n… …ate of th… …ematica… …ction… …event {… …a dumn… …l this is… …riable i… …and pr…

The law of large numbers proved

category: ap stats and business stats, dougherty introduction to econometrics, econometrics, the college board

3 comments

The law of large numbers overview

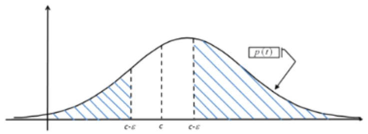
I have already several posts about the law of large numbers:

1. start with the intuition, which is illustrated using Excel;
2. simulations in Excel show that convergence is not as fast as some textbooks claim;
3. to distinguish the law of large numbers from the central limit theorem read this;
4. the ultimate purpose is the application to simple regression with a stochastic regressor.

Here we busy ourselves with the proof.

Measuring deviation of a random variable from a constant

Let X be a random variable and c some constant. We want a measure of X differing from the constant by a given number ε or more. The set where X differs from c by $\varepsilon>0$ or more is the outside of the segment $[c-\varepsilon,c+\varepsilon]$, that is, $\{|X-c|\ge\varepsilon\}=\{X\le c-\varepsilon\}\cup\{X\ge c+\varepsilon\}$.



Now suppose X has a density $p(t)$. It is natural to measure the set $\{|X-c|\ge\varepsilon\}$ by the probability $P(|X-c|\ge\varepsilon)$. This is illustrated in Figure 1.

Figure 1. Measuring the outside of interval

Convergence to a spike formalized

Generating Bernoulli random variable (coin) in Excel - Exercise 2.1

category: ap stats and business stats, st104a, statistics 1

2 comments

Generating the Bernoulli random variable is very easy and is better than actually tossing a coin many times. This video illustrates Exercise 2.1 from my book: how to use Excel RAND() and IF functions to simulate the coin in Excel

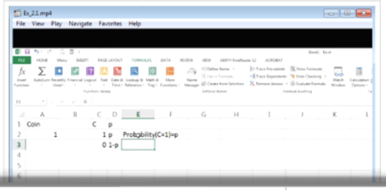
Simulation steps

1. RAND() (with empty parentheses) is the Excel function to generate a uniformly distributed random variable on the interval $(0,1)$. If you enter the command =RAND() in two different cells, the generated variables will be independent. The generated values will be recalculated each time you change the spreadsheet, unless the Recalculate option is off.
2. The IF function has three arguments. The first argument is a condition. If the condition is satisfied, the IF function supplies the second argument. If not, the third argument is produced. For example, the command =IF(RAND()>0.3,1,0) simulates an unfair coin: the value 1 is taken 70% of the time.

See how this exercise can be extended to illustrate the law of large numbers.

The same RAND() command can be used to visualize the dependence of the slope and intercept estimators on the sample.

The RAND() command is also used to generate normally distributed variables. A similar construction allows one to simulate any random variable with an invertible cumulative distribution function, see Exercise 7.6 in my book.



SEARCH RESULTS FOR PROPERTIES OF V…

Properties of variance

category: agresti & franklin, agresti and franklin, ap stats and business stats, econometrics, statistics 1, statistics 2, the college board

All properties of variance in one place

Certainty is the mother of quiet and repose, and uncertainty the ca… content

Preliminaries: study properties of means with proofs.

Definition. Yes, uncertainty leads to **variance**, and we measure it by $Var(X)=E(X-EX)^2$. It is useful to use the name **deviation from mean** for $X-EX$ and realize that $E(X-EX)=0$, so that the mean of the deviation from mean cannot serve as a measure of variation of X around EX.

Property 1. Variance of a linear combination. For any random variables X,Y and numbers a,b one has

(1) $Var(aX+bY)=a^2Var(X)+2abCov(X,Y)+b^2Var(Y)$.

The term $2abCov(X,Y)$ in (1) is called an **interaction term**. See this post for the definition and properties of covariance.

Proof.

$Var(aX+bY)=E[aX+bY-E(aX+bY)]^2$

(using linearity of means)

$=E(aX+bY-aEX-bEY)^2$

(grouping by variable)

$=E[a(X-EX)+b(Y-EY)]^2$

(squaring out)

$=E[a^2(X-EX)^2+2ab(X-EX)(Y-EY)+(Y-EY)^2]$

(using linearity of means and definitions of variance and covariance)

$=a^2Var(X)+2abCov(X,Y)+b^2Var(Y)$.

Property 2. Variance of a sum. Letting in (1) …

Выбор материала и аудитории

- Элементарный материал читают мало
- https://seeing-theory.brown.edu/
- Изложение сложного материала требует последовательности
- Лучше всего привязать свой сайт к имеющимся программам, курсам, книгам https://www.pearson.com/
- Выбор языка зависит от выбора аудитории
- Объем и разнообразие увеличивают видимость сайта на Интернете и число посещений

Выбор хостинга

- Смотри рейтинг и отзывы на Интернете www.top10.com/
- Возраст компании, общее число сайтов
- Доступность, скорость, uptime, расположение серверов
- Набор инструментов. WordPress не требует программирования
- Наличие JavaScript, HTML, CSS, PHP – зависит от контента
- Стоимость, оплата дополнительных пакетов (у меня 190 долларов в год)
- Возможность торговать и предоставлять платные услуги

Необходимые программы

- MS Office
- Графические пакеты Inkscape
- Для математики Latex, Scientific Word
- Для видео Camtasia. 300 долларов в год
- Специализированные пакеты в зависимости от контента (Stata, 145-465 долларов в год для Назарбаев Университета)

Продвижение сайта

- Социальные сети. LinkedIn.com
- Главное история и слухи (word of mouth)
- Широта и глубина охвата материала
- Размещение объявлений

Проблема: изучение казахского

- Русскоязычное окружение
- Словарный запас
- Незнание грамматики
- Недостаток практического общения
- Глаголы требуют отработки и доведения до автоматизма
- Мой опыт изучения португальского
    - Неправильные глаголы имеют до 40 различных форм