Orientation - V

Famous Statisticians

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- Did you ever wonder who contributed the ideas or formulas from the subject Statistics? It is our responsibility to know few statisticians, who did yeomen services to the field.

Sir Ronald Aylmer Fisher

- FRS was English statistician, evolutionary biologist, and geneticist.

- Few acclaims from other statisticians:
  - Richard Dawkins -
    "The greatest of Darwin's successors"
    Anders Hald -
    "Fisher was a genius who almost single-handedly created the foundations for modern statistical science"
- His contributions to experimental design, analysis of variance, and likelihood based methods have led some to call him "The Father of Statistics"
- it was first Fisher who referred to the growth rate r (used in equations such as the logistic function) as the Malthusian parameter, as a criticism of the writings of Thomas Robert Malthus, who Fisher referred to "...a relic of creationist philosophy..." in observing the fecundity of nature and deducing (as Darwin did) that this therefore drove natural selection.

DHRUVA defining excellence

However, it is much more likely that Fisher called r the Malthusian parameter because, in 1798, Malthus published "An Essay on the Principal of Population", which contained a mathematical model of population growth that became commonly known as the Malthusian Growth Model and which contained said parameter in the following formula:

$$P(t) = P_0 e^{rt}$$

where P_0 = initial population, r = growth rate, t = time.

- He was an influential English mathematician who has been credited for establishing the discipline of mathematical statistics.

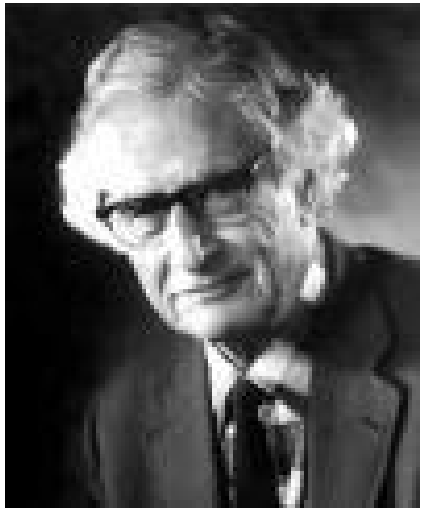
- In 1911 he founded the world's first university statistics department at University College London. He was a proponent of eugenics, and a protg and biographer of Sir Francis Galton.
- A sesquicentenary conference was held in London on 23 March 2007, to celebrate the 150^{th} anniversary of his birth.

- Gertrude Mary Cox (1900 - 1978) was an influential American statistician and founder of the department of Experimental Statistics at North Carolina State University.
- She was later appointed director of both the Institute of Statistics of the Consolidated University of North Carolina and the Statistics Research Division of North Carolina State University.

- Her most important and influential research dealt with experimental design; she wrote an important book on the subject with W. G. Cochran.
- In 1949 Cox became the first female elected into the International Statistical Institute and in 1956 she was president of the American Statistical Association.
- From 1931 to 1933 Cox undertook graduate studies in statistics at the University of California at Berkeley, then returned to Iowa State College as assistant in the Statistical Laboratory. Here she worked on the design of experiments.
- In 1939 she was appointed assistant professor of statistics at Iowa State.
- In 1940 Cox was appointed professor of statistics at North Carolina State University at Raleigh. There she headed the new department of Experimental Statistics.

- In 1945 she became director of the Institute of Statistics of the Consolidated University of North Carolina, and the Statistics Research Division of the North Carolina State College which was run by William

- In the same year of 1945 Cox became the editor of Biometrics Bulletin and of Biometrics and she held this editorship for 10 years. In 1947 she was a founder member of the International Biometric Society.
- In 1950 she published a joint work with Cochran, Experimental Design, which quickly became a classic text.
- In 1960 she took up her final post as Director of Statistics at the Research Triangle Institute in Durham, North Carolina. She held this post until she retired in 1964.
- Cox received many honours. In 1949 she became the first woman elected into the International Statistical Institute. In 1956 she was elected President of the American Statistical Association while in 1975 she was elected to the National Academy of Sciences.



- Frank Yates (1902 - 1994) was one of the pioneers of 20th century statistics.
- He worked on the design of experiments, including contributions to the theory of analysis of variance and originating Yates' algorithm and the balanced incomplete block design.
- He became an enthusiast of electronic computers, in 1954 obtaining an Elliott 401 for Rothamsted and contributing to the initial development of statistical computing.
- In 1931 Yates was appointed assistant statistician at Rothamsted Experimental Station by R.A. Fisher.
- In 1933 he became head of statistics when Fisher went to University

- At Rothamsted he worked on the design of experiments, including contributions to the theory of analysis of variance and originating Yates's algorithm and the balanced incomplete block design.
- During World War II he worked on what would later be called operations research.
- After the war he worked on sample survey design and analysis. He became an enthusiast of electronic computers, in 1954 obtaining an Elliott 401for Rothamsted and contributing to the initial development of statistical computing.

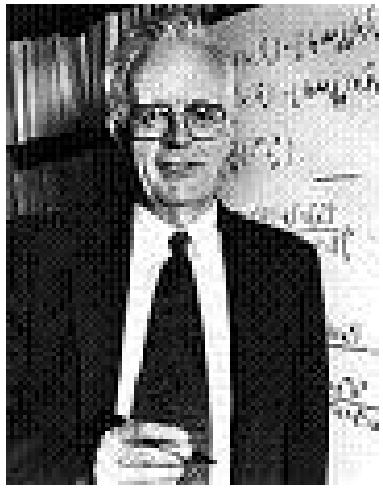
- In 1960 he was awarded the Guy Medal in Gold of the Royal Statistical Society, and in 1966 he was awarded the Royal Medal of the Royal Society.
- He retired from Rothamsted to become a Senior Research Fellow at Imperial College London. He died in 1994, aged 92, in Harpenden.
- Kirstine Smith (1878 - 1939) was born in Denmark. She was admitted as a candidate for a doctorate in statistics in 1916 at the University of London and wrote a thesis that was a precursor to modern optimal design theory, published in 1918 Biometrika.
- Karl Pearson considered her to be one of his most brilliant mathematical statisticians.
- Her work with Pearson on minimum chi-square spurred a controversial dialog between Pearson and Fisher, and led to Fishers introduction of sufficient statistics. She returned to teaching in Denmark and ended her career there.

- John Wilder Tukey (1915 - 2000) was a professor of Statistics at Princeton University. A mathematician by training, his statistical interests were many and varied.
- He contributed significantly to what is today known as the jackknife procedure.
- He introduced the box plot in his 1977 book,Exploratory Data Analysis.He also contributed to statistical practice and articulated the important distinction between exploratory data analysis and confirmatory data analysis, believing that much statistical methodology placed too great an emphasis on the latter.

- He is an American statistician best known for development of the FFT algorithm and box plot. His statistical interests were many and varied. He is particularly remembered for his development withJames Cooley of the CooleyTukey FFT algorithm.
- In 1970, he contributed significantly to what is today known as the jackknife estimationalso termed Quenouille-Tukey jackknife. He introduced thebox plot in his 1977 book,"Exploratory Data Analysis".
- Tukey's range test, the Tukey lambda distribution, Tukey's test of additivity and Tukey's lemma all bear his name. He is also the creator of several little-known methods such as the trimean andmedian-median line, an easier alternative to linear regression.
- In 1974, he developed, with Jerome H. Friedman, the concept of the projection pursuit.

- eorge Edward Pelham Box, born on October 18, 1919, was a pioneer in the areas of quality control, time series analysis, and design of experiments.
- Still on the engineering faculty of University of Wisconsin, he is well-known for the quote all models are wrong, but some are useful.
- His books Statistics for Experimenters and Time Series Analysis: Forecasting and Control are classic texts.

- Box served as President of the American Statistical Association in 1978 and of the Institute of Mathematical Statistics in 1979.
- He received the Shewhart Medal from the American Society for Quality Control in 1968, the Wilks Memorial Award from the American Statistical Association in 1972, the R. A. Fisher Lectureship in 1974, and the Guy Medal in Gold from the Royal Statistical Society in 1993.
- Box was elected a member of the American Academy of Arts and Sciences in 1974 and a Fellow of the Royal Societyin 1979.



- Sir David R. Cox, born in 1924, is a British statistician who has made pioneering and important contributions to numerous areas of statistics and applied probability.
- Perhaps the best known of his many developments is the proportional hazards model, which is widely used in the analysis of survival data. He is now an Honorary Fellow of Nuffield College and a member of the Department of Statistics at the University of Oxford.

- He was employed from 1944 to 1946 at the Royal Aircraft Establishment, from 1946 to 1950 at the Wool Industries Research Association in Leeds, and from 1950 to 1956 worked at the Statistical Laboratory at the University of Cambridge.
- From 1956 to 1966 he was Reader and then Professor of Statistics at Birkbeck College, London. In 1966, he took up the Chair position in Statistics at Imperial College London where he later became head of the mathematics department.
- In 1988 he became Warden of Nuffield College and a member of the Department of Statistics at Oxford University. He formally retired from these positions in 1994.
- Cox has received numerous honorary doctorates. He has been awarded the Guy Medals in Silver (1961) and Gold (1973) of the Royal Statistical Society.
- He was elected Fellow of the Royal Society of London in 1973, was knighted by Queen Elizabeth II in 1985 and became an Honorary Fellow of the British Academy in 2000.

- He is a Foreign Associate of the US National Academy of Sciences and a foreign member of the Royal Danish Academy of Sciences and Letters.
- In 1990 he won the Kettering Prize and Gold Medal for Cancer Research for "the development of the Proportional Hazard Regression Model." In 2010 he was awarded the Copley Medal of the Royal Society "for his seminal contributions to the theory and applications of statistics."
- It is given for "outstanding achievements in research in any branch of science, and alternates between the physical sciences and the biological sciences". Awarded every year, the medal is the oldest Royal Society medal still being awarded, having first been given in 1731.

- Jerome H. Friedman is one of the world's leading researchers in statistical data mining. He has been a Professor of Statistics at Stanford University for nearly 20 years and has published on a wide range of data mining topics including nearest neighbor classification, logistic regression, and high-dimensional data analysis, and machine learning.
- Gradient boosting is a machine learning technique for regression problems, which produces a prediction model in the form of an ensemble of weak prediction models, typically decision trees.
- It builds the model in a stage-wise fashion like other boosting methods do, and it generalizes them by allowing optimization of an arbitrary differentiable loss function.
- Gradient boosting method can be also used for classification problems by reducing them to regression with a suitable loss function.
- The method was invented by Jerome H. Friedman in 1999 and was published in a series of two papers, the first of which[1] introduced the method, and the second one[2] described an important tweak to the algorithm, which improves its accuracy and performance.