David Evans

Mathematician and Electrical Engineer

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Private Climate Research, 2006 –

Researching climate, at first out of curiosity and in support of Joanne's blog at joannenova.com.au, and later, realizing the conventional models were flawed, to find out how it really worked.

GoldNerds, 2007 –

GoldNerds sells information for investors about gold companies on the Australian Stock Exchange. Published as sophisticated spreadsheets, downloadable by subscribers. A team of researchers gather information about the companies, and I combine, edit, and publish their research every two weeks. Founder and owner of GoldNerds Pty Ltd.

Private Mathematics Research, 1990 –

Writing a book on Fourier Analysis, introducing a geometrical approach to Fourier analysis. It grew out of a PhD thesis, but covers new territory in transforms, calculus, the number system, and multivariable polynomials.

Australian Greenhouse Office and Department of Climate Change, 1999 – 2005, 2008 – 2010

Modeller and lead programmer for FullCAM, a carbon accounting model for estimating and predicting all biomass, litter and soil carbon pools in forest and agricultural systems. FullCAM is the program used by the Australian Government to calculate the carbon in Australia's biosphere for the Kyoto Protocol, and to calculate carbon credits under the carbon tax legislation. FullCAM models individual plots, estates of plots, and spatial arrays of plots connected to spatial information such as rainfall, temperature, soil type, farming practices, and satellite images of clearing and revegetation. 250k+ lines of code, commercial-quality Windows GUI app written in C/C++.

Education

Stanford University, Stanford, California, 1984 – 89

Ph.D. Electrical Engineering

Digital signal processing, Fourier analysis, fast computation of transforms, information theory, game theory. Thesis introduced an improved version of the Fourier transform.

M.S. Electrical Engineering

M.S. Statistics

University Of Sydney, Sydney Australia, 1979 – 83

B.E. Electrical Engineering (First Class Honours), University Medal (1983)

M.A. Applied Mathematics

B.Sc. Applied Mathematics and Physics

Programming Skills

Applications programming: C/C++, including building Windows applications.

Excel spreadsheets: All aspects, including VBA for advanced, program-like spreadsheets.

Fourier analysis: Fast transforms (FFTs etc.), filters, frequency domain processing.

Bio for Economics

David Evans did a PhD at Stanford in a statistical area of electrical engineering that included portfolio theory. While some of his fellow students became financial rocket scientists on Wall Street, David returned to Australia to write a maths book. No one funds you to write a maths book, so David turned to the markets for a living, and has been an investor and trader since 1990. An obvious money and debt bubble was continuing to grow in the late 1990s, and he switched from banks to gold. Good analytic information about gold stocks is hard to come by, so David started goldnerds.com.au, selling sophisticated spreadsheets analyzing all the gold companies on the Australian Stock Exchange (ASX). His investment interests include how money is manufactured, monetary history, banks, and gold. He has spoken at the Australian Gold Symposium for several years, with controversial views and great reviews.

Bio for Climate

Dr David Evans consulted full-time for the Australian Greenhouse Office (later the Department of Climate Change) from 1999 to 2005, and part-time 2008 to 2010, modelling carbon in Australia's biosphere for Kyoto accounting purposes.

Evans is a mathematician and engineer, with six university degrees in ten years, including a PhD from Stanford University in electrical engineering.

The evidence supporting the idea that CO_2 emissions were the main cause of global warming reversed itself from 1998 to 2006, causing Evans to move from being a warmist to a skeptic.

Evans' wife is Joanne Nova, whose blog at joannenova.com.au is one of the largest climate skeptic websites in the world.

Previous Experience

Applications Programmer and Modeler, Canberra, 1996 – 2005

Modeling, simulation, and research involving mathematics, mainly in C/C++ and Microsoft Excel.

Information Engineer, Aquatech Pty Ltd, Canberra, 1994 – 96

Aquatech is a consultancy specializing in collecting and analyzing environmental information involving water. I managed projects, built databases to aid in collecting and presenting data for our clients, wrote tenders, set up and maintained Aquatech's computers, did page layout and typography, and analyzed statistical data sets.

Staff Scientist & Software Engineer, KLA Instruments Corp, California, 1989 – 90

KLA is the world leader in making machines that optically inspect silicon wafers for defects. Carrying out largely self-directed research under Dr Ben Tsai, I developed novel algorithms for detecting defects from CCD-digitized images of silicon wafers—achieving huge improvements in speed and sensitivity over previous methods. Constructed a program for detecting defects,

simulating wafer-image formation, and automated statistical testing of defect-detection algorithms.

Electronics Technician, Chemistry Dept, Stanford University, 1988

Prototyped, tested and designed small signal analogue, pulse, control and high voltage circuits for the Electronic Support Group, an independent electronic consulting service.

Research Assistant, Electrical Engineering Dept, Stanford University, 1984 – 88

Investigated the Hartley transform with Professor Bracewell in 1984; developed a greatly improved single-radix digit-reversal algorithm. Investigated topics in information theory, portfolio theory and game theory with Professor Tom Cover, using computer simulation, traditional mathematics, and statistics. Discovered the geometric transform, and improved fast algorithms for transform computation.

Student Engineer, Telecom Australia, Sydney Australia, 1983

Developed software and hardware for a microprocessor-based communications device.

Student Engineer, Department of Main Roads, NSW, 1981 – 82

Researched emergency telephone systems on the Sydney Harbour Bridge.

Patents

USA #4,823,297 Algorithm for single-radix digit-reversal permutation copyrighted and patented by the Stanford Technology Licensing Office, Stanford University. Issued April 18, 1989.

USA #5,537,669 A hybrid technique for finding defects on digitized device images (such as digital images of silicon wafers) using spatial domain and frequency domain techniques. Issued to KLA, 16 July 1996.

Papers

D.M.W. Evans *An Improved Digit-Reversal Permutation Algorithm for the Fast Fourier and Hartley Transforms*, IEEE Transactions on Acoustics, Speech, and Signal Processing, pp. 1120–25, Aug. 1987.

D.M.W. Evans *A Second Improved Digit-Reversal Permutation Algorithm for Fast Transforms*, IEEE Transactions on Acoustics, Speech, and Signal Processing, pp. 1288–91, Aug. 1989.

(1989—Stopped publishing papers to write the book.)