

## **Curriculum Vitae**

Christian “Chrilly” Donn timer was born in 1957 in Wels, Austria. He has a Ph.D. in Mathematical Statistics. Results of his Ph.D. were published in the top journal JASA (Journal of the American Statistical Association). Afterwards he worked for some years in the mathematics and computer department at the Institute for Advanced Studies in Vienna. From 1989 to 1992 he was responsible for the development of life-support software at ESTEC (European Space Technology Centre) in Noordwijk/Netherlands.

Since 1993 he is professional computer chess programmer. He was the main author of the FPGA based chess program Hydra. Hydra was initially developed (under the name Brutus) together with Ken Thompson (UNIX-‘father’). Hydra is considerable stronger than Deep Blue from IBM. It never lost to a human player. The “chess monster from UAE” was sponsored and developed by PAL group.

Since 2007 he is chief scientist for the Sibyl financial project of PAL group.

Chrilly’s main strength is the combination of excellent programming skills with profound mathematical knowledge.

Name: Dr. Mag. Christian “Chrilly” Donn timer

Born: 05.10.1957 in Wels, Austria

Nationality: Austria

Family status: Married with Mag. Anna Donn timer since 08.08.1981

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## **Education:**

1968-76: Gymnasium (High-School)

1976-83: Study of Mathematics and Physics at the University of Vienna. Magister (Master) in both disciplines.

1984: Post graduate course at the Institute for Advanced Studies, Dept. for Mathematical Methods and Computer Science, Vienna/Austria.

1987: Doktor (Ph.D.) in Mathematical Statistics at the Technical University Vienna.

## **Professional Career:**

1979-81: Part time job at the Chemiefaser-Lenzing-AG. Real-Time-Programming in process control.

1985-86: Assistant Prof. for Applied Statistics at the Institute for Advanced Studies in Vienna.

1987: Project manager for medical software at MEDATA GesmbH Vienna.

1988-93: SIEMENS-Austria, PSE (Program and Software Development). Operating-System and Telecommunications projects.

1989-91: Consultant at the European Space Research and Technology Centre (ESTEC) in Noordwijk, Netherlands. Development of ECOSIM, a life-support simulation system.

Note: During this time he was formal staff member at Siemens-PSE.

Since 1994: Foundation of NimzoWerkstatt OEG. Development of numerous computer chess software and hardware products.

2000-03: Development of the Brutus Distributed FPGA chess program. Since 2002 in cooperation with the Univ. Paderborn/Germany.

2004-2006: Chief developer of Hydra for PAL-Group, UAE. Hydra is the successor of Brutus.

Since 2007: Chief-scientist for the Sibyl financial project of PAL group.

2007-2014: Several projects for the Research Department of Siemens-CT (Computer-

Tomography) at Forchheim/Germany. FPGA programming for the next generation of high resolution Computer-Tomographs.

Since 2010: Lecturer at the Mathematics Institute of the University of Jena (Germany).

### **Journal-Publications:**

Ch. Donninger, C. Signor: Least Absolute Deviation Estimators, IAS-Science Papers, Vienna June 1984.

Ch. Donninger: The Distribution of Centrality in Social Networks, Social Networks Vol. 8, 1986

Ch. Donninger: Is it always efficient to be nice – A Computer Simulation, in A. Diekmann, P. Mitter (ed.) Paradox Effects in Social Behaviour, Würzburg 1986.

Ch. Donninger: RENE – A Relational Database for the Analysis of Social Networks, Proceedings of the VIII. Intern. Symposium on Computer at the University, Dubrovnik 1986.

Ch. Donninger, W. Krämer: Spatial Autocorrelation Among Errors and the Relative Efficiency of OLS in the Linear Regression Model, Journal of the American Statistical Association, June 1987, Vol.82, Nr.398.

Ch. Donninger: Mathematische, statistische und computergestützte Methoden der Netzwerkanalyse (Mathematical, statistical and programming methods for the Analysis of networks), Phd-Thesis, TU-Vienna, June 1987.

Ch. Donninger: ORACLE Evaluation or Princess Matrix meets the ORACLE monster, ESTEC-YCV Report, Noordwijk Nov.1989.

Ch. Donninger et al.: ECOSIM – An Environmental Control Simulation Software, 21<sup>st</sup> Intern. Conference on Environmental Systems, San Francisco Jul. 1991, SAE Technical Paper Series Nr. 911543.

Ch. Donninger.: The relation of mobility, strategy and the mean dead rabbit in chess. Advances in Computer Chess 6, 1992

Ch. Donninger: Null-Move and Deep Search, ICCA-Journal 16(3), 1993.

(Best-article award for 1993. According the ICCA-editor the most influential computer-chess article since 1985).

I. Althöfer, Ch. Donninger, U. Lorenz, V. Rottmann. On Timing, Permanent Brain and Human Intervention. Proc. Advances in Computer Chess (ACC) 7, ed. J. van den Herik

Ch. Donninger and U. Lorenz. The Hydra Project. XCell Online Journal, Second Quarter 2005

Ch. Donninger and U. Lorenz. The Hydra Project. Xilinx Journal (selected paper), Issue 53, 2005

Ch. Donninger, U. Lorenz. Innovative Opening-Book Handling. Proc. of Advances in Computer Games (ACG) 11, Taipei, Taiwan, Springer LNCS 4250, 2006

Ch. Donninger, U. Lorenz. The Chess Monster Hydra. Proc. of 14th International Conference on Field-Programmable Logic and Applications (FPL), 2004, Antwerp – Belgium, LNCS 3203, pp. 927 – 932, eds. J. Becker, M. Platzner, S. Vernalde

Ch. Donninger, A. Kure, U. Lorenz. Parallel Brutus: The First Distributed, FPGA Accelerated Chess Program. Proc. of 18th International Parallel & Distributed Processing Symposium (IPDPS), 2004, Santa Fe – NM USA, IEEE Computer Society

Ch. Donninger: Flying hours with Ken Thompson. New in Chess, 2009, Vol.1

### **Working-Papers on Social Science Research Network SSRN:**

Ch. Donninger: How to Beat the Market with the Implied Volatility Term Structure: The HeroRATs Strategy, Dec. 2013.

Ch. Donninger: Improving the S&P Dynamic VIX Futures Index: The Mojito 3.0 Strategy, Dec. 2013.

Ch. Donninger: VIX Futures Basis Trading: The Calvados-Strategy 2.0, Jan. 2014.  
Ch. Donninger: Harvesting the Downside Beta Premium with the Implied Volatility Term Structure: The Cinderella Strategy, Jan. 2014.  
Ch. Donninger: Plain Vanilla SPX-Options Hedging: The Effect of Smile-Adjustments and the Lark versus Owl Question, Feb. 2014.  
Ch. Donninger: Smarter than the Options-Market? A Real-Measure GARCH Option Pricing Model with Volatility Regime Simulation, Mar. 2014  
Ch. Donninger: Simple and Efficient Portfolio Construction with Implicit Covariance Estimation: The Ant Strategy, Apr. 2014.  
Ch. Donninger: Adaptive Covered Call Writing for NASDAQ Stocks: The Turtle Strategy, May 2014.  
Ch. Donninger: Adaptive Put Writing for the S&P-500 Index and NASDAQ Stocks: The Austrian and Doberman Pinscher Strategy, May 2014.  
Ch. Donninger: Hedging Adaptive Put Writing with VIX Futures: The Affenpinscher Strategy, May 2014.  
Ch. Donninger: An Investigation of Simple Intraday Trading Strategies, Aug. 2014.  
Ch. Donninger: Lovers by Night, Strangers by Day? An Investigation of Simple Overnight Trading Strategies, Sep. 2014.  
Ch. Donninger: Towards the Perfect Football Betting Bot: A First Preliminary Report of Zoccer, Sep. 2014.  
Ch. Donninger: Trading the Patience of Mrs. Yellen. A Short VIX-Futures-Strategy for FOMC Announcement Days, Jan. 2015.  
Ch. Donninger: Modeling and Trading the VIX and VSTOXX with Futures, Options and the VXX, May 2015.  
Ch. Donninger: The Poverty of Academic Finance Research: Spread Trading Strategies in the Crude Oil Futures Market, Jun. 2015.  
Ch. Donninger: An Empirical Investigation of Optimal Energy Futures Rolling, Jul. 2015.  
Ch. Donninger: Chrilly's Toolbox of Energy Futures Trading, Aug. 2015  
Ch. Donninger: The Dynamic Hedging of Weekly S&P-500-Futures Options. A Cashbot Case Study, Jan. 2016.  
Ch. Donninger: Forecasting the VIX to Improve VIX-Derivatives Trading, Apr. 2016.  
Ch. Donninger: Is Daily Pairs Trading of ETF-Stocks Profitable?, Aug. 2016.  
Ch. Donninger: Pricing Options with the Stochastic Volatility Regime Simulation for GARCH, HAR GARCH-VIX and VIX-Models, Aug. 2016.  
Ch. Donninger: Improving Smart Beta ETFs with Smart Beta, Aug. 2016.  
Ch. Donninger: Improving Smart Beta ETFs with Smart Beta, Revision 1, Aug. 2016.  
Ch. Donninger: Building a Portfolio of ETFs to Exploit Negative Autocorrelation, Sep. 2016.  
Ch. Donninger: A Statistical Comparison of Body-Weight and Asset-Prices, Sep. 2016.  
Ch. Donninger: Modeling, Forecasting and Trading the Crude Oil Term Structure, Nov. 2016.  
Ch. Donninger: Timing the Tail-Risk-Protection of the SPY with VIX-Futures by a Hidden Markov Model. The Wool-Milk-Sow Strategy, Apr. 2017.  
Ch. Donninger: Trading Bull- and Bear-Markets with a Hidden Markov Model, Apr. 2017.  
Ch. Donninger: Measuring the Influence of German Members of Parliament on Twitter: The Vanellus-Twitter-Index VaTI, Aug. 2018  
Ch. Donninger: The automatic identification of German AfD supporters on Twitter: The Vanellus-Follower-Classification-Index VaFCI, Aug. 2018.

### **Other-Publications:**

Ch. Donninger, A. Donninger: Chrilly's Goldreport (in German).  
Monthly newsletter. The Goldreport is an edutainment project. Besides Gold, special finance

topics are treated in a popular way. But there are also reflections about 30+ years of marriage. Numerous popular articles in German, Dutch and Italian (computer-) chess magazines about computer chess. Translation of Dutch chess articles to German.

**Publications about Ch.Donninger:**

T.Mueller: Your Move, Creating a better chess player, New Yorker, Dec. 12, 2005, p.62-69  
[https://de.wikipedia.org/wiki/Christian\\_Donninger](https://de.wikipedia.org/wiki/Christian_Donninger)  
[en.wikipedia.org/wiki/Hydra\\_\(chess\)](https://en.wikipedia.org/wiki/Hydra_(chess))

**Programming and Hardware-Description Languages:**

C, C++: 500 K-lines of production code.

Intel-x88 Assembler: 200 K-LOC.

Java: 120 K-LOC.

Verilog: 35 K-LOC.

VHDL: 35 K-LOC

C#: 10 K-LOC

Javascript: 10 K-LOC

Objective-C: 5 K-LOC

8051-Assembler: 5 K-LOC.

Ada: 5 K-LOC

Fortran: 5 K-LOC

Basic: 5 K-LOC

Go: 5 K-LOC

**Natural Languages:**

German (native speaker), English (excellent), Dutch (once excellent), Spanish (once modest)

**Hobbies:**

Outdoor activities, cooking, reading and writing popular science articles.