

CHRISTIAN OESCH, PHD

PERSONAL INFORMATION

Born in Switzerland, 31 January 1985

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PROFESSIONAL EXPERIENCE

2016–Present Postdoc, UNIVERSITY OF BASEL

University of Basel

Continued research in Agent-Based Modeling, Computational Economics, Finance, and Evolutionary Computation. Teaching of a Master's course on Computational Economics, organization and teaching of a repeated seminar in working with scientific software, and assisting in the teaching of a Bachelor's course in Multivariate Data Analysis.

2012–2016 Assistant, UNIVERSITY OF BASEL

University of Basel

Research in computational economics and finance. Teaching assistance of a bachelor's course in Multivariate Data Analysis, organization and teaching of a repeated seminar in working with scientific software, supervision of various bachelor student's project papers.

2011–2015 Co-Founder, DELPHI AG

Delphi AG

Proprietary algorithmic currency trading, high-frequency equity trading.

EDUCATION

2012-2016 University of Basel

PhD in Economics

Summa cum laude · Faculty of Business & Economics, WWZ

Thesis: A Computational Investigation of Price Impact

This thesis explored market price impact on double-auction order book exchanges with various computational tools. The result is a cumulative dissertation with several published articles.

Advisors: Prof. Dr. Dietmar MARINGER & Prof. Dr. Axel KIND

2009-2011 University of Basel

*MSc in Business
& Economics*

Faculty of Business & Economics, WWZ

My studies focused on a computational approach to economics and finance, including lectures in computer science, econometrics, and statistics.

SELECTED PUBLICATIONS

2017 P-Tree Programming

*Proceedings of the
IEEE SSCI*

This study presents a novel method for automatic program synthesis. It outperforms standard Genetic Programming to a large extent. Furthermore, it relies on a concise set of parameters which are held constant for all problems. The algorithm can be employed for many typical computational intelligence tasks such as classification, automatic program induction, and symbolic regression.

Authors: Christian OESCH

2017 Low-Latency Liquidity Inefficiency Strategies

*Quantitative
Finance*

This study delivers a proof-of-concept for a high frequency-based trading system based on an evolutionary computation method. Using NASDAQ

Historical TotalView-ITCH limit order book data, execution volumes can be tracked. This allows for testing of the strategies with minimal assumptions. The system evolves profitable and robust strategies with high returns and low risk. Authors: Christian OESCH, Dietmar MARINGER

2015 A Neutral Mutation Operator in Grammatical Evolution

Advances in Intelligent Systems and Computing

In this paper we propose a Neutral Mutation Operator (NMO) for Grammatical Evolution (GE). The NMO can be applied in combination with any other genetic operator or even different search algorithms (e.g. Differential Evolution or Particle Swarm Optimization) for GE and works especially well in small populations and larger problems.

Authors: Christian OESCH, Dietmar MARINGER

2014 An agent-based model for market impact

Proceedings of the IEEE CIFEr 2014

Based on recent theoretical and empirical developments this paper proposes an agent-based model for market impact. The model is able to produce both temporary and permanent market impact while keeping statistical price efficiency as well as concave market impact functions in relative order sizes.

Authors: Christian OESCH

TEACHING

2017 Computational Economics

University of Basel

Master's course in Computational Economics, including topics such as numerical optimization, simulation methods, complex systems, and computational intelligence applied to economics and finance.

2012-2017 Working with scientific software

University of Basel

Organization of a seminar in working with scientific software. Introduction courses to LaTeX and Matlab.

2012-2017 Multivariate Data Analysis

University of Basel

Assistance and tutorials in bachelor's course Multivariate Data Analysis. Lecture by Prof. Dr. Dietmar MARINGER, University of Basel, Switzerland.

AWARDS

University of Basel

2016 · Baume & Mercier Award (Baume & Mercier Doktoratspreis) for the best dissertation at the Faculty of Business and Economics in the academic year 2015/2016.

Q-Trade

2015 · Q-Trade Bootcamp Fellowship

IEEE CIFEr

2014 · IEEE CIFEr Best Student Paper Awards, 3rd place.

University of Basel

2011 · Faculty of Business & Economics Award for Best Master's Thesis 2010/2011

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