

# Patrick Aschermayr

Seeking a challenging and research-driven environment where I can make a meaningful contribution.



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## DOCTORAL RESEARCH

### Bayesian Inference on State Space Models

My research area evolves around sequential parameter estimation and prediction for dependent latent variable models in a times series setting. In particular, I am working to improve the scalability of existing algorithms in terms of time and parameter size. This is particularly useful for financial and economic data, which often appear in a sequential setting.

## WORK EXPERIENCE

University of Zurich & ZZ (Schweiz) AG (FT) 2016 – 2018  
Zurich, CH  
**Portfolio Manager & Analyst**

I participated in a [unique program](#) where students manage parts of the university endowment. With three colleagues, I managed 2mn€ during my time in Switzerland. The focus of our Global Macro strategy was on Carry and Value, implemented via Bonds, Forwards, NDFs and Futures.

Deutsche Bank (FT) 04/2016 – 07/2016  
Frankfurt, GER  
**Research - Strategic Beta Intern**

I supported colleagues during the launch of Deutsche Asset model & strategy portfolios and implemented internal analysis tools, such as an order tool or performance & factsheets for mandates.  
*Case study: Breaking Expectations in a Diminishing Return Environment*

Deutsche Asset Management (FT) 10/2015 – 03/2016  
Frankfurt, GER  
**Portfolio Management - Multi Asset Intern**

I implemented internal analysis tools, such as an index forecasting tool, sector update & a new issue sheet and supported PMs in daily tasks. *Case study: Hedging Convertible Bond Portfolios*

## PROJECTS

State Space Models Everywhere (09/2020 – 12/2020) FINISHED  
A blog series on my [website](#) introducing hidden Markov and semi-Markov models in more detail. Later on, I build a Particle MCMC algorithm from scratch to estimate parameter from said models.

A Julia Library for State Space Model Inference (08/2019 – ) ONGOING  
A (hopefully soon-to-be) open sourced Julia library for applying state of the art Bayesian inference algorithms for various state space models. A unique trait here is the ability to sequentially estimate parameter predict over time.

## EDUCATION

2018 – LONDON, UK **Doctor of Philosophy**  
Statistics  
London School of Economics and Political Science  
FULLY FUNDED BY THE ESRC

2016 – 2018 ZURICH, CH **Master of Science**  
Quantitative Finance  
ETH Zurich, University of Zurich  
GPA: 5.4 (BEST:6.0)

2012 – 2015 VIENNA, AUT **Bachelor of Science**  
Economics, Business and Social Sciences  
Vienna University of Economics and Business  
GPA: 1.3 (BEST:1.0)

## REFERENCES

*References available on request*

## CORE SKILLS

STATISTICS/ML	Bayesian Inference, particularly: (Non-parametric) parameter estimation Prediction
ALGORITHMS	Markov Chain Monte Carlo Sequential Monte Carlo Filtering
COMPUTING	Julia, Python, R L <sup>A</sup> T <sub>E</sub> X, Git
SOFT SKILLS	Critical Thinking Communication ( <a href="#">Teaching and Blogging</a> ) Adaptability
FINANCE KNOWLEDGE	Basic Global Macro Basic Factor Investing Backtesting

## MISCELLANEOUS

LANGUAGES	German (Native), English (Fluent)
INVOLVEMENT	LSE PhD student representative Zurich QFin Alumni club Local tennis and table football club
INTERESTS	Books (fantasy, manga) Sports (football, fitness) Cooking (Austrian, Asian) Gaming (Pokemon)

## PUBLICATIONS

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### Articles in Peer-Reviewed Journals

### Articles under Review

### Working Papers

### Book Chapters

### Conferences and Presentations

05/2019   I presented my [Particle MCMC](#) poster at the [Social and Economic Data Science Summit](#) in London, UK.

### Invited Talks

*First author publications in **bold***

## GRANTS AND AWARDS

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### Awards and Honors

### Grants and Fellowships

2018 – 2021   [Economic and Social Research Council \(ESRC\)](#) studentship

## TEACHING EXPERIENCE

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### London School of Economics

2019   [Bayesian Inference](#) - Teaching assistant, third year Bachelor level

2018   [Quantitative Methods](#) - Teaching assistant, first year Bachelor level

## SERVICE

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### Journal Peer Review

## PROFESSIONAL AFFILIATIONS

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## CONSULTING ENGAGEMENTS

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