

# Henry E. Clausen

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## Education

### University of Edinburgh

*Ph.D. in Informatics*

Semantic Anomaly Detection in computer networks

Edinburgh, UK  
4/2018 – 2021

### Imperial College

*M.S. in Statistics, high Distinction (81/100)*

Thesis: 'Modelling human behaviour in computer networks' (86/100)

London, UK  
10/2016 – 9/2017

### Swiss Fed. Institute of Technology

*M.S. in Physics, GPA – 5.5 (excellent)*

Thesis: 'Tri-Criteria Optimization for Scenario-Based Risk Measures'

Zurich, Switzerland  
2/2014 – 2/2016

### Swiss Fed. Institute of Technology

*B.S. in Physics, GPA – 4.9 (good)*

Presentation: 'Cross-sections, decay rates and Feynman rules'

Zurich, Switzerland  
9/2010 – 9/2013

## Work Experience

### OLZ & Partners

*Technical consultant*

- Implementation of optimization algorithms for complex constraints
- Advice and comparison of computational solvers
- Weekly meetings with supervisor to discuss progress and direction
- Final results were communicated via a presentation in front of entire company

Zurich, Switzerland  
6/2016 – 9/2016

### Swiss Fed. Institute of Technology

*Research Assistant*

- Designing and testing of optimization algorithms for mixed-integer problems
- Numerical algorithms for large-scale financial optimization
- Major contribution to manuscript (see below)
- Cooperations with Stoxx Index Provider

Zurich, Switzerland  
2/2016 – 6/2016

## Relevant Technical Projects

### Semantic Anomaly Detection in computer networks

*Ph.D thesis*

- Data-driven anomaly detection for enterprise Cyber-Security
- Development of sequential *Unsupervised learning* method to identify semantic behaviours in network traffic
- Planned usage of *Deep Learning* methods for pattern identification
- Automatised dataset creation in synthetic computer network

University of Edinburgh  
4/2018 – 2021

### Modeling human behaviour in computer networks

*Master thesis (86/100)*

- Development of sequential *Unsupervised learning* methods for enterprise network logs
- Extensive usage of *Spark* for data assessment and model fitting
- Publication of results in *World Scientific*
- Release of highly optimised R/C++ package planned

Imperial College  
5/2017 – 9/2017

## Relevant Skills

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### Programming Skills.....

**Working knowledge:** R, Python, Scala, C++, Spark, Hadoop MapReduce, Tensorflow

**Basic knowledge:** Java, MySQL, PostgreSQL

### Other IT Skills.....

**Working knowledge:** Unix shell, Linux, Windows, AMPL, MS Office

### Languages.....

**German:** Mother tongue

**English:** Fluent, TOEFL: 104/120

**Spanish:** Good command

## Manuscripts and Conference Presentations

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- **Clausen, H.**, Adams, N.M., Briers, M. (2018): 'A Bayesian Approach to Modelling Human Behaviour in Computer Networks', In, Heard, N.A., Adams N.M., Rubin-Delanchy, P.G.T, and Turcotte, M.J.M (eds), Data Science for Cyber-Security, *World Scientific*
- **Clausen, H.**, Wuertz, D., Setz, T. (in review): 'An R/AMPL Portfolio Software Library', *Springer*

## Additional Experience

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### Swiss Fed. Institute of Technology

*Member of the Students' Music Association*

**Zurich, Switzerland**

*from 2/2014*

- Extensive engagement in harmonic/melodic theory, the piano, and electronic music production
- Teaching younger students first steps in music production
- Multiple live performances in front of larger audiences

### Greenpeace

*Member and activist*

**Zurich/Edinburgh**

*from 2011*

- Assisted the political campaign for 'Initiative Grüne Wirtschaft', a referendum targeting the sustainable usage of natural resources
- Targeting planning
- Campaigning on streets and via telephone

### Travel through South America

- Independent journey through Panama, Colombia, Ecuador, Peru, Argentina, and Brazil
- 6 day hike across the Andes
- Began learning Spanish and Salsa/Tango

*9/2013–2/2014*

## References

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Prof. David Aspinall

*Ph.D. supervisor*

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Prof. Niall Adams

*Thesis supervisor*

n.adams@imperial.ac.uk

Lorenz Beyeler

*Project supervisor at OLZ & Partners*

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