# Henry E. Clausen

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## Education

**University of Edinburgh** — **Edinburgh, UK**
*Ph.D. in Informatics* — *4/2018 – 2021*
Semantic Anomaly Detection in computer networks

**Imperial College** — **London, UK**
*M.S. in Statistics, high Distinction (81/100)* — *10/2016 – 9/2017*
Thesis: 'Modelling human behavour in computer networks' (86/100)

**Swiss Fed. Institute of Technology** — **Zurich, Switzerland**
*M.S. in Physics, GPA – 5.5 (excellent)* — *2/2014 – 2/2016*
Thesis: 'Tri-Criteria Optimization for Scenario-Based Risk Measures'

**Swiss Fed. Institute of Technology** — **Zurich, Switzerland**
*B.S. in Physics, GPA – 4.9 (good)* — *9/2010 – 9/2013*
Presentation: 'Cross-sections, decay rates and Feynman rules'

## Work Experience

**OLZ & Partners** — **Zurich, Switzerland**
*Technical consultant* — *6/2016 – 9/2016*

- 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

**Swiss Fed. Institute of Technology** — **Zurich, Switzerland**
*Research Assistant* — *2/2016 – 6/2016*

- 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

## Relevant Technical Projects

**Semantic Anomaly Detection in computer networks** — **University of Edinburgh**
*Ph.D thesis* — *4/2018 – 2021*

- 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

**Modeling human behaviour in computer networks** — **Imperial College**
*Master thesis (86/100)* — *5/2017 – 9/2017*

- 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

## Relevant Skills

### 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

- **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

**Swiss Fed. Institute of Technology** — **Zurich, Switzerland**
*Member of the Students' Music Association* — *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** — **Zurich/Edinburgh**
*Member and activist* — *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** — **–**
*9/2013–2/2014*

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

## References

| | | |
|---|---|---|
| Prof. David Aspinall | *Ph.D. supervisor* | david.aspinall@ed.ac.uk |
| Prof. Niall Adams | *Thesis supervisor* | n.adams@imperial.ac.uk |
| Lorenz Beyerle | *Project supervisor at OLZ & Partners* | lorenz.beyeler@olz.ch |