

Education

- 2018–Present **PhD (with integrated MRes) Machine Learning**, *Centre for Doctoral Training in Financial Computing (UCL / Imperial)*, London.
- Supervisor Professor Massimiliano Pontil
- Co-supervisor Associate Professor Carlo Ciliberto
- 2016–2017 **MSc Computational Statistics and Machine Learning**, *University College London*, London, Avg. grade – 76%.
Merit
- Scholarship Computer Science Excellency Scholarship (£4000)
- Performance Gatsby Computational Neuroscience Unit PhD-modules:
Unsupervised Learning (78%), *Approximate Inference* (79%)
- 2013–2016 **BSc Mathematics**, *University of Warwick*, Coventry, Avg. grade – 80%.
First class

Masters Thesis

- Title *Neural Multi-Language Generation using Variational Autoencoders*
- Supervisors Professor David Barber and Harshil Shah
- Summary Applied VAEs to NLP. Extended the graphical model to two observed sentences in different languages, using WaveNet as the recognition and generative model. Training the model on the EU parallel corpus it generates novel sentences in both languages with shared meaning, learning a latent representation of language.
- Technology Implemented in *Python* using *Theano* and *Lasagne*

Experience

Vocational

- 2017–2018 **Data Scientist**, *swhere*, London.
- Developed statistical models for clients in order to generate revenue and save costs, working together with Professor Yeeh Whye Teh and other academic faculty at Cambridge, UCL and Oxford.
- Responsibilities
- **Predictive modelling**
 - Used Python and matplotlib to visualise event processes over time for a big UK utility client, improving operational efficiency
 - Predicted future energy prices using Gradient-boosting for a big energy trading company, beating their internal model
 - Conceptualised and implemented machine learning models using pandas and scikit-learn
 - **Data engineering**
 - Created data pipelines for transforming heterogeneous raw data into clean dataframes
 - Used AWS instances to process compute-intensive transformations and predictions
 - Automated data pipeline using make-like utilities (snakemake)

Unit 26, Wellington Buildings – E34NA, London, UK

☎ +44(0) 7999255535 • ✉ me@isakfalk.com • 🌐 isakfalk.com

- 2016–2017 **Software Engineer Intern**, *eTech*, Birmingham.
Contributed to a git interface using JSON storage, writing code and unit tests in JavaScript
- 2015–2016 **Software Engineer Intern**, *Black Pepper Software*, Birmingham.
Developed wireframes using HTML / CSS

Academic

- 2016–2017 **Research Intern**, *University of Warwick*, Coventry.
Worked with Professor Yulia Timofeeva on modelling and visualising neural models and activity of the olfactory bulb

Activities

- **Research**
 - Visualised response of a twin-neural system depending on parameter values using Matlab/Octave
- **Conferences**
 - Was accepted to the Volga Neuroscience Meeting 2016 summer school attending lectures on theoretical, molecular and cellular neuroscience and presented our poster to an audience of 200 scientists
 - Presented our poster at ICUR, a student led joint conference between Warwick and Monash university

Technical skills

Basic	JavaScript, C, elisp, HTML / CSS
Intermediate	Linux, Emacs, AWS, MATLAB, BASH, \LaTeX
Advanced	Python (Scipy stack, TensorFlow, Theano)

Languages

Swedish	Mothertongue
English	Fluent
Japanese	Conversational
Italian	Conversational