

# Andrey Malinin

## PHD STUDENT IN MACHINE LEARNING AND NLP

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## Education

### Department of Engineering, University of Cambridge

Cambridge, UK

PHD IN NATURAL LANGUAGE PROCESSING

Oct. 2014 - PRESENT

- PhD Thesis: "Deep Learning for automatic assessment and learning of non-Native spoken English". Supervisor: Professor Mark Gales.

### University of Cambridge

Cambridge, UK

M.ENG. (HONS.) INFORMATION ENGINEERING

Oct. 2010 - June 2014

- Master's Thesis: "Recurrent Neural Network Language Models" Degree Mark: Pass with Merit. Supervisor: Professor Mark Gales.

### Massachusetts Institute of Technology

Cambridge, MA, USA

EXCHANGE YEAR AT MIT

Sept. 2012 - May 2013

- Studied Computer Science and Electrical Engineering

### International School of Helsinki

Helsinki, Finland

INTERNATIONAL BACCALAUREATE PROGRAMME

Aug. 1998 - May 2009

- 42 / 45 points on International Baccalaureate exams

## Research Interests

### Machine Learning

- Predictive uncertainty estimation
- Attention-based models
- Generative models

### Natural Language Processing

- Automatic spoken language proficiency assessment
- Q/A Relevance assessment

### Speech Recognition

- Language modelling & adaptation

## Publications

### A Hierarchical attention based model for off-topic spontaneous spoken response detection

In Proceedings of the IEEE Automatic Speech Recognition and Understanding Workshop (ASRU)

A. MALININ, K. KNILL AND M. GALES

Dec. 2017

### An attention based model for off-topic spontaneous spoken response detection: An Initial Study

In Proceedings of the ISCA Workshop on Speech and Language Technology for Education (SLaTE)

A. MALININ, K. KNILL, A. RAGNI, Y. WANG AND M. GALES

Aug. 2017

### Incorporating Uncertainty into Deep Learning for Spoken Language Assessment

In Proceedings of the Association for Computation Linguistics

A. MALININ, A. RAGNI, Y. WANG, K. KNILL AND M. GALES.

Aug. 2017

### Off-topic Response Detection for Spontaneous Spoken English Assessment

In Proceedings of the Association for Computation Linguistics

A. MALININ, R. C. VAN DALEN, Y. WANG, K. KNILL AND M. GALES.

Aug. 2016

## Selected Conference Presentations

### Google NLP Summit

Zurich, Switzerland

POSTER PRESENTATION:

Sept. 2017

- Incorporating Uncertainty into Deep Learning for Spoken Language Assessment

## Association for Computational Linguistics

ORAL PRESENTATION:

- *Incorporating Uncertainty into Deep Learning for Spoken Language Assessment*

Vancouver, Canada

August 2017

## Cambridge Language Science Annual Symposium

POSTER PRESENTATION:

- *Deep Density Networks with Uncertainty for spontaneous spoken language assessment*

Cambridge, UK

November 2016

## Association for Computational Linguistics

POSTER PRESENTATION:

- *Off-topic Response Detection for Spontaneous Spoken English Assessment*

Berlin, Germany

August 2016

## Google PhD Summit

POSTER PRESENTATION:

- *Off-topic spoken response detection for language assessment*

London, UK

June 2016

## Programming Experience

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### Programming Languages

- Python (+Numpy/Scipy/Pandas)

### Machine Learning Packages

- TensorFlow
- PyTorch
- Scikit-Learn

### Operating System Tools

- Unix Shell
- Bash
- Git

## Software Implementations

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- A Hierarchical attention based model for topic relevance assessment. (TensorFlow)
- A deep sequence-attention based system for proficiency assessment and providing feedback. (TensorFlow)
- Novel Deep Density Network based system for automatic assessment with explicit uncertainty estimates (TensorFlow)
- Off-topic spoken response detection system based on a topic-adapted RNN Language Model (CUED RNNLM Toolkit)
- Variational Auto-Encoder and Generative Adversarial Network for neural art generation (side project) (TensorFlow)

## Teaching Experience

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### Monitor

LISBON MACHINE LEARNING SUMMER SCHOOL

July 2017

### Undergraduate Supervisor

SUPERVISED A 3RD YEAR COURSE ON STATISTICAL INFERENCE COVERING AND MACHINE LEARNING

Feb-March. 2017

### Lab Demonstrator

3RD YEAR UNDERGRADUATE LAB ON OBJECT-ORIENTATED PROGRAMMING OF A SUDOKU SOLVER

Feb. 2015, 2016

## Work and Other Experience

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### UK Speech Conference

HEAD ORGANIZER

Sept. 2017  
Cambridge, UK

### Alan Turing Institute Data Study Group

FACILITATOR

Sept. 2017  
London, UK

### Bayesian Deep Learning Summer School

ATTENDEE

Aug. 2017  
Moscow, Russia

### Cambridge University Russian Society

PRESIDENT

2014-2015  
Cambridge, UK

### ARM

SUMMER INTERN

Aug. - Oct. 2013  
Cambridge, UK