

# Florian Lennard Kreyssig

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Email : florian@kreyssig.com

## EDUCATION

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- **University of Cambridge** Cambridge, UK  
*Ph.D in Machine Learning* Oct. 2018 –
  - **Research:** Semi-Supervised Learning, Active Learning, Speech and Language Technology
  - **Teaching:** Supervising students for 3F3 Statistical Signal Processing and 3F8 Inference
- **University of Cambridge** Cambridge, UK  
*Master of Engineering, Information and Computer Engineering, Ranked Top 10%* Oct. 2014 – Jun. 2018
  - **Master's Thesis:** Deep Learning for User Simulation in Spoken Dialogue Systems.  
Received an award for the best final presentation.
- **Braunschweig University of Technology** Braunschweig, Germany  
*Fundamentals of Electrical Engineering; parallel to high school; 1.0 (95% in exam)* Nov. 2013 – Feb. 2014
- **Wilhelm-Gymnasium** Braunschweig, Germany  
*Abitur, 1.0* Nov. 2012 – July. 2014
- **Elwood College** Melbourne, Australia  
*Exchange Student* July. 2011 – Nov. 2012

## WORK AND LEADERSHIP EXPERIENCE

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- **Speech Group, Cambridge University Engineering Department** Cambridge, UK  
*Research Intern under Prof. Woodland* June 2016 – Sept 2016, June 2017 – Oct 2017
  - **Research:** '16: Investigating Recurrent Neural Network (RNN) acoustic models for speech recognition.  
'17: Novel Neural Network acoustic models for speech recognition. Published at ICASSP 2018.
  - **HTK Development:** HTK is a research source code toolkit designed primarily for automatic speech recognition with more than 100,000 users around the world.  
'16: Added RNN capability in the form Long Short-Term Memory (LSTM) units and Gated Recurrent Units (GRU) written in C and CUDA/C.  
'17: Made using RNNs more user-friendly through a Python interface. Added more Deep Learning capabilities, such as attention and ResNets. Published at ICASSP 2019.
- **IAV Automotive Engineering** Gifhorn, Germany  
*Software/Electronic Engineering Intern* July. 2015 – Sept. 2015
  - **Automatic Test Benches:** Autonomised the configuration and measurement system of Temperature-, Pressure- and Lambda-Sensors using a microprocessor. Programmed in C.
- **Cambridge Union** Cambridge, UK  
*Head of Audio-Visual, Deputy Convenor* July. 2015 – Dec. 2015
  - **Head of Audio-Visual:** Maintaining/upgrading technical equipment of the university's largest student society. Live sound equalization at speaker events including Josh Radnor and Yanis Varoufakis. Managing a team of stewards when running the debates and speaker events.
  - **Deput Convenor:** Organizing the Cambridge IV, one of the world's most prestigious debating championships. Overseeing a 5-figure budget, a three day event with over 450 people and a large team of assistants.
- **Myself**  
*Design, Production and Sale of High-End Rubik's Cubes* 2011 –2014
  - **Production:** Design & handcrafting of professional 5x5x5 Rubiks Cubes from a base product by a Chinese OEM.
  - **Recognition:** Used by the 2011 World Champion, 2013 World- and Vice-world champion.
- **McDonalds** Melbourne, Australia  
*Crew Member* Dec. 2011 – Nov. 2012

## PUBLICATIONS

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- C. Zhang, **F.L. Kreyszig**, Qiuqia Li, Philip Woodland, “PyHTK: Python Library and ASR Pipelines for HTK”, ICASSP, Brighton, 2019
- **F.L. Kreyszig**, I. Casanueva, P. Budzianowski and M. Gasic, “Neural User Simulation for Corpus-based Policy Optimisation of Spoken Dialogue Systems”, SIGDIAL, Melbourne, 2018
- B. Tseng, **F.L. Kreyszig**, P. Budzianowski, I. Casanueva, Y. Wu, S. Ultes and M. Gasic, “Variational Cross-domain Natural Language Generation for Spoken Dialogue Systems”, SIGDIAL, Melbourne, 2018
- I. Casanueva, P. Budzianowski, **F.L. Kreyszig**, S. Ultes, B. Tseng, Y. Wu and M. Gasic, “ Feudal Dialogue Management with Jointly Learned Feature Extractors”, SIGDIAL, Melbourne, 2018
- **F.L. Kreyszig**, C. Zhang, and P.C. Woodland, “Improved TDNNs using Deep Kernels and Frequency Dependent Grid-RNNs”, ICASSP, Calgary, 2018.
- **F.L. Kreyszig**, C. Zhang, and P.C. Woodland, “Modular construction of complex deep learning architectures in HTK”, UK Speech, Cambridge, 2017.
- Q. Li, C. Zhang, **F.L. Kreyszig**, P.C. Woodland, “Experimental studies on teacher-student training of deep neural network acoustic models”, UK Speech, Cambridge, 2017.

## AWARDS

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- **University:** 4<sup>th</sup>-Year Project Presentation Award, G-Research 3<sup>rd</sup>-Year Project Prize, Emmanuel College Senior Scholarship (2016, 2017), Scholarship of the German National Academic Foundation (2014-2018)
- **High School:** Abitur-Award of both the German Mathematical and the German Physics Association (2014). State-level champion of the German Federal Math Competition (2013) and of ”JugendForscht” in Chemistry (2008)

## PROGRAMMING SKILLS

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- **Languages:** C, C++, CUDA, Python **Technologies:**HTK, Tensorflow, PyTorch