

VÉSTEINN SNÆBJARNARSON

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EDUCATION

University of Iceland

Reykjavík, Iceland

Master of Science in Computer Science - First Class with Distinction

October 2021

- Thesis on Question Answering (QA) for Icelandic. Statistical and neural models compared using a new dataset for Icelandic and machine translated datasets. Icelandic and Icelandic-English language models were trained and fine tuned for question answering. Cross lingual open QA system where questions are asked in Icelandic and answers given in English developed and adapted to an Icelandic only system.

University of Iceland

Reykjavík, Iceland

Bachelor of Arts in Philosophy - First Class

June 2012

University of Iceland

Reykjavík, Iceland

Bachelor of Science in Mathematics - First Class

October 2011

Reykjavík Junior College - Menntaskólinn í Reykjavík

Reykjavík, Iceland

Matriculation Exam with focus on Physics and Mathematics - Eðlisfræðideild 1

May 2008

EXPERIENCE

NLP Researcher / CTO

November 2019 – Present

Miðeind ehf - Language technology

Reykjavík, Iceland

- Promoted to CTO in autumn 2021, responsible for development and research of language technology solutions for Icelandic, including a voice assistant for Icelandic.
- Neural machine translation (NMT) systems between Icelandic and English, other languages in development. System in use by official websites of the Icelandic government and in collaboration with the Translation Centre at the Ministry for Foreign Affairs. Translation system available at <https://velthyding.is>.
- Training and analysis of neural language models, mono-lingual and cross-lingual, that can handle Icelandic.
- Development of various NLP-tools for Icelandic, e.g. named entity recognition, part-of-speech, parsing, sentiment analysis, grammar and spelling correction.
- Large scale collection and cleaning of monolingual and parallel data for training models.

Senior Developer

January 2018 – October 2019

Trackwell ehf - resource management business

Reykjavík, Iceland

- Full-stack web development for fleet- and human-resource management solutions.
- Modernised systems. Front-ends written in react and containerisation of back-end systems.
- Designed multi tenancy solution for separated clients that had previously been running on multiple servers.

Developer / PM / CTO

August 2012 – March 2017

Cooori ehf - Icelandic / Japanese ed-tech company

Reykjavík, Tokyo

- Started as a software developer after graduation, got promoted to product manager and moved to Tokyo to take on role of CTO in 2015.
- Cooori is an ed-tech company teaching languages online using AI based methods and spaced repetition. In 2015 the company pivoted from teaching Japanese to a global audience to teaching English, then adapting solutions directly for large companies in Japan, now focusing on standardised English exams.

Research Assistant - Bioinformatics

February 2010 – August 2012

University of Iceland, faculty of Life and Environmental Sciences

Reykjavík, Iceland

- Assembled and analysed genomic, transcriptomic and epigenetic data, mainly in lichens. Got familiar with scientific packages in python, running computations on high performance computing clusters and operating Linux servers.
- Developed methods for handling assembly of metagenomic samples using multiple sequencing types.

TEACHING

- Introduction to Language Technology** | *Sessional Teacher, University of Iceland* Autumn 2021
- Head teacher in masters-level course in the Computer Science department.
 - Focus on NLP using deep learning with comparison to classical methods when relevant.
- AI lifecycle** | *Guest lecturer, University of Iceland* Spring 2021
- Lecture on neural machine translation with a case study.
- Introduction to Logic** | *TA, University of Iceland* Spring 2012
- Mathematical Analysis** | *TA, University of Iceland* Autumn 2009

TALKS AND PRESENTATIONS

- Artificial Intelligence and Question Answering** | *Icelandic Computer Science Society* November 2021
- Lecture on AI and QA based on MSc thesis.
- Language and Artificial Intelligence** | *Reykjavík City library* September 2021
- An informal conversation for the public with a journalist interviewing. General discussion about AI and language.
- Machine Translation, an Important Option** | *Reykjavík University* May 2021
- Recorded talk about machine translation for Icelandic and its applications. Part of a conference about language technology, Máltækniþyltingin (e. *The Language Technology Revolution*)
- ByteBERT - Masked Language Modeling for Morphologically rich Languages** | *ALPS, Grenoble* January 2021
- Poster presentation at the Advanced Language Processing School.

PEER-REVIEWED PUBLICATIONS

- Anna Björk Nikulásdóttir, Þórunn Arnardóttir, Jón Guðnason, Þorsteinn Daði Gunnarsson, Anton Karl Ingason, Haukur Páll Jónsson, Hrafn Loftsson, Hulda Óladóttir, Einar Freyr Sigurðsson, Atli Þór Sigurgeirsson, **Vésteinn Snæbjarnarson** and Steinþór Steingrímsson. 2021. *Help Yourself from the Buffet: National Language Technology Infrastructure Initiative on CLARIN-IS*. In Proceedings of the CLARIN Annual Conference.
- Haukur Barri Símonarson, **Vésteinn Snæbjarnarson**, Pétur Orri Ragnarsson, Haukur Páll Jónsson and Vilhjálmur Þorsteinsson. 2021. *Miðeind's WMT 2021 Submission*. In Proceedings of the Sixth Conference on Machine Translation.
- Haukur Páll Jónsson*, Haukur Barri Símonarson*, **Vésteinn Snæbjarnarson***, Steinþór Steingrímsson* and Hrafn Loftsson. 2020. *Experimenting with Different Machine Translation Models in Medium-Resource Settings*. In Proceedings of the 23rd International Conference on Text, Speech and Dialogue (TSD 2020). Brno, Czech Republic (Online). Lecture Notes in Computer Science, vol 12284. Springer, Cham.
- Vivian P. W. Miao, Sheeba S Manoharan-Basil, **Vésteinn Snæbjarnarson** and Ólafur Andrésson. 2012. *Expression of lec-1, a mycobiont gene encoding a galectin-like protein in the lichen Peltigera membranacea*. Symbiosis 57, 23-31.

AWARDS AND GRANTS

- The University of Iceland Science and Innovation Motivational Award** | *500k ISK* Summer 2021
- For the cross-lingual question answering part of MSc thesis, with focus on the ability of being able to get an answer in English when one can not be found in Icelandic. Awarded annually to a project affiliated with the University in some way.
- Icelandic Student Innovation fund** | *2.7M ISK* Spring 2020
- For creating an Icelandic QA corpus - Natural Questions in Icelandic.
 - Five students were hired in summer 2020 to create the corpus.
- Icelandic Student Innovation fund** | *900k ISK* Summer 2010
- For developing methods for combining different genome assembly methods in a post-processing step.
- Participant at International Chemistry Olympiads** | *Moscow and Budapest* Summer 2008 and 2009
- Competed on behalf of Iceland after qualifying in domestic competitions.

TECHNICAL SKILLS

Natural languages: Fluent in Icelandic, English and Swedish. Studied German at school.

Programming languages: Python, SQL (Postgres), JavaScript, R, Bash and familiar with some other languages.

Tools: Git, Docker, Slurm (HPC), Linux

Libraries: pytorch, fairseq, transformers (huggingface), pandas, NumPy, various web frameworks etc.