

Hrafn Loftsson  
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Department of Computer Science  
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# Hrafn Loftsson

## PERSONAL DETAILS

- Born April 14, 1965, Reykjavik, Iceland. Icelandic Citizenship. Languages: Icelandic (native), English (fluent), Danish (good), German (basic).

## RESEARCH INTERESTS

- My main research field is Natural Language Processing. I have published methods and tools for morphological analysis, part-of-speech tagging, named entity recognition, shallow parsing, machine translation, corpus construction, intelligent computer-assisted language learning, question-answering, and clinical diagnosis.  
I have also published research in the field of Computer Science Education, in particular about teaching programming.

## EDUCATION

- |           |   |
|-----------|---|
| 2004-2007 | • <b>PhD in Computer Science/Natural Language Processing.</b> University of Sheffield, England. |
| 1990-1992 | • <b>MSc in Computer Science and Operations Research.</b> Pennsylvania State University, USA.   |
| 1985-1989 | • <b>BSc in Computer Science.</b> University of Iceland.  |

## WORK EXPERIENCE

- |                 |  |
|-----------------|--|
| 08/2011-Present | <ul style="list-style-type: none"><li>• <b>Associate Professor in the Department of Computer Science, Reykjavik University.</b></li><li>• Research in the field of Natural Language Processing.</li><li>• Supervision of research-oriented B.Sc. students, and graduate students.</li><li>• Courses taught at the B.Sc. and M.Sc. level.</li></ul> |
| 09/2013-02/2018 | <ul style="list-style-type: none"><li>• <b>Kolibri ehf., Reykjavik.</b></li><li>• Software Developer.</li><li>• Languages/Frameworks: C#, Xamarin, Javascript, Node.js, AngularJS.</li></ul>   |
| 11/2003-08/2011 | <ul style="list-style-type: none"><li>• <b>Assistant Professor in the School of Computer Science, Reykjavik University.</b></li><li>• Research in the field of Natural Language Processing.</li><li>• Supervision of research-oriented B.Sc. and M.Sc. students.</li></ul>   |

## WORK EXPERIENCE (continued)

- Courses taught at the B.Sc. and M.Sc. level.
- 07/2001-10/2003
- **Dean of the School of Computer Science, Reykjavik University.**
  - Responsible for budget, strategy, development and management of the School of Computer Science.
  - Executive board member of Reykjavik University.
  - Interaction and collaboration with students, other schools, and the industry.
  - Courses taught at the B.Sc. level.
- 01/2000-06/2001
- **Assistant Professor in the School of Computer Science, Reykjavik University.**
  - Courses taught at the B.Sc. level.
- 11/1997-01/2000
- **Fjárfestingarbanki atvinnulífsins (FBA), Reykjavik.**
  - Programmer/analyst. Responsible for trading systems.
- 02/1995-10/1997
- **Verðbréfamarkaður Íslandsbanka (VÍB), Reykjavik.**
  - Chief Information Officer.
  - Design and implementation of trading systems.
  - Languages/Frameworks: Delphi Pascal and Oracle PL/SQL.
- 07/1992-02/1995
- **Greenwich Capital Markets (GCM), Connecticut, USA and London, England.**
  - Design and implementation of trading systems.
  - Languages/Frameworks: C/C++ and Smalltalk.
- 02/1989-08/1990
- **Íslenskt hugvít hf., Reykjavik.**
  - Design and implementation of a securities system.
  - Languages/Frameworks: RPG/400.
- 06/1988-01/1989
- **Talnakönnun hf., Reykjavik.**
  - Programming of a securities system.
  - Languages/Frameworks: RPG.

## AWARDS AND GRANTS

- 2024
- **University Cooperation Fund (“Samstarfssjóður háskóla”)**
  - *Title:* New solutions for the healthcare system.
  - *Project Manager:* Hrafn Loftsson, Reykjavik University (RU)
  - *Collaborators:* Jón Guðnason (RU), Hannes H. Vilhjálmsón (RU), Stefán Ólafsson (RU), Haukur Ingi Jónsson (RU), Hafsteinn Einarsson, University of Iceland (UI), Emil L. Sigurðsson (UI), Steindór O. Ellertsson (UI).
  - *Duration:* 2 years. *Grant:* 35,100,000 ISK.
- 2023
- **The Icelandic Student Innovation Fund**
  - *Title:* Question Answering: An app and a machine learning model.
  - *Project Manager:* Hrafn Loftsson, Reykjavik University
  - *Collaborators:* Eric Nyberg and Njáll Skarphéðinsson, Carnegie Mellon University.
  - *Duration:* 3 months. *Grant:* 3,060,000 ISK.
- 2021
- **The Strategic Research and Development Programme for Language Technology**
  - *Title:* Automatic Entity Linking for Icelandic.
  - *Project Manager:* Ólafur Páll Geirsson, Snjallgögn ehf.
  - *Collaborators:* Snjallgögn ehf.; Hrafn Loftsson, Reykjavik University; Hafsteinn Einarsson, University of Iceland

## AWARDS AND GRANTS (continued)

- *Duration:* 3 years *Grant:* 69 million ISK.
- 2021
  - **The Strategic Research and Development Programme for Language Technology**
  - *Title:* Using Machine Learning Models for Clinical Diagnoses.
  - *Project Manager:* Emil Lárus Sigurðarson, Primary Health Care service of the Capital Area (PHCCA)
  - *Collaborators:* Hrafn Loftsson, Reykjavik University; Steindór Oddur Ellertsson, PHCCA
  - *Duration:* 18 months. *Grant:* 36.6 million ISK.
- 2021
  - **The Strategic Research and Development Programme for Language Technology**
  - *Title:* Spoken Dialogue Framework for Icelandic.
  - *Project Manager:* Hannes H. Vilhjálmsson, Reykjavik University (RU)
  - *Collaborators:* Hrafn Loftsson, RU, Jón Guðnason, RU; Anna Björk Nikulásdóttir, Grammatek ehf.; Eydís Huld Magnúsdóttir, Tiro ehf.; Já ehf.; Akraneskaupstaður.
  - *Duration:* 2 years. *Grant:* 70 million ISK.
- 2021
  - **CEF-Telecom**
  - *Title:* National Language Technology Platform (NLTP).
  - *Project Manager:* Tilde (Latvia)
  - *Collaborators:* Reykjavik University (Iceland), Culture Information Systems Centre (Latvia), Malta Information Technology Agency, Office of the State Advocate (Malta), University of Malta, University of Tartu (Estonia), Central State Office for the Development of Digital Society (Croatia), University of Zagreb (Croatia).
  - *Duration:* 2 years. *Grant:* 796,000 EUR.
- 2021
  - **CEF-Telecom**
  - *Title:* Microservices at your service: bridging the gap between NLP research and industry.
  - *Project Manager:* Lingsoft (Finland)
  - *Collaborators:* Reykjavik University (Iceland), University of Tartu (Estonia), Gradient (Spain).
  - *Duration:* 2 years. *Grant:* 553,000 EUR.
- 2020
  - **The Icelandic Student Innovation Fund**
  - *Title:* Automatic topic classification of Icelandic texts.
  - *Project Manager:* Hrafn Loftsson, Reykjavik University
  - *Collaborator:* Vilhjálmur Þorsteinsson, Miðeind ehf.
  - *Duration:* 3 months. *Grant:* 900,000 ISK.
- 2020
  - **The Icelandic Student Innovation Fund**
  - *Title:* Pre-nominal adjective order in Icelandic.
  - *Project Manager:* Hrafn Loftsson, Reykjavik University
  - *Duration:* 3 months. *Grant:* 900,000 ISK.
- 2019
  - **Almannarómur: Language Technology for Icelandic**
  - *Projects:* Speech Recognition, Speech Synthesis, Machine Translation, Grammar Checking, Tools and Resources.
  - *Project Manager:* Anna Björk Nikulásdóttir
  - *Collaborators:* SÍM (Samstarf um íslenska máltækni)
  - *Duration:* 5 years.
- 2019
  - **The Strategic Research and Development Programme for Language Technology**
  - *Title:* Automatic Text Summarization for Icelandic.
  - *Project Manager:* Hrafn Loftsson, Reykjavik University
  - *Collaborator:* Morgunblaðið, mbl.is
  - *Duration:* 1 year. *Grant:* 11.3 million ISK.
- 2019
  - **The Strategic Research and Development Programme for Language Technology**

## AWARDS AND GRANTS (continued)

- *Title:* Named Entity Recognition for Icelandic.
  - *Project Manager:* Hrafn Loftsson, Reykjavik University
  - *Collaborator:* The Icelandic Stock Exchange
  - *Duration:* 1 year. *Grant:* 8.4 million ISK.
- 2013
- **The Icelandic Student Innovation Fund**
  - *Title:* An Open-Source Language-Independent Question-Answering System.
  - *Project Manager:* Hrafn Loftsson, Reykjavik University
  - *Co-applicants:* Jón Gunnar Þorsteinsson, University of Iceland.
  - *Duration:* 3 months. *Grant:* 340,000 ISK.
- 2011
- **NordPlus – Nordiske Sprog og Kultur**
  - *Title:* A System Architecture for Intelligent Computer-Assisted Language Learning.
  - *Project Manager:* Hrafn Loftsson, Reykjavik University.
  - *Co-applicants:* Lars Borin, University of Gothenburg; Birna Arnbjörnsdóttir, University of Iceland.
  - *Duration:* 2 years. *Grant:* 38,500 EUR.
- 2010
- **The Icelandic Student Innovation Fund**
  - *Title:* A gold standard for Icelandic.
  - *Project Manager:* Eiríkur Rögnvaldsson, University of Iceland.
  - *Co-applicants:* Hrafn Loftsson, Reykjavik University; Sigrún Helgadóttir, The Árni Magnússon Institute for Icelandic Studies.
  - *Duration:* 3 months. *Grant:* 420,000 ISK.
- 2010
- **The Icelandic Student Innovation Fund**
  - *Title:* An improved shallow parser for Icelandic text.
  - *Project Manager:* Hrafn Loftsson.
  - *Co-applicants:* Eiríkur Rögnvaldsson, University of Iceland; Jón Eðvald Vignisson, CLARA.
  - *Duration:* 3 months. *Grant:* 280,000 ISK.
- 2009
- **The Icelandic Student Innovation Fund**
  - *Title:* Tagging and correctiong a new corpus.
  - *Project Manager:* Hrafn Loftsson.
  - *Co-applicants:* Sigrún Helgadóttir, The Árni Magnússon Institute for Icelandic Studies; Eiríkur Rögnvaldsson, University of Iceland.
  - *Duration:* 3 months. *Grant:* 280,000 ISK.
- 2009
- **Rannis – The Icelandic Centre for Research (Grant of Excellence)**
  - *Title:* Viable Language Technology Beyond English – Icelandic as a Test Case
  - *Project Manager:* Eiríkur Rögnvaldsson, University of Iceland.
  - *Co-applicants:* Hrafn Loftsson, Reykjavik University; Matthew J. Whelpton, University of Iceland; Kristín Bjarnadóttir, The Árni Magnússon Institute for Icelandic Studies; Anthony Kroch and Joel Wallenberg, University of Pennsylvania; Mikel L. Forcada, Universitat d’Alacant.
  - *Duration:* 3 years. *Grant:* 45 million ISK.
- 2007
- **Rannis – The Icelandic Centre for Research**
  - *Title:* Improved tagging accuracy of Icelandic text.
  - *Project Manager:* Hrafn Loftsson.
  - *Co-applicants:* Eiríkur Rögnvaldsson, University of Iceland and Sigrún Helgadóttir, The Institute of Lexicography, University of Iceland.
  - *Duration:* 2 years. *Grant:* 3.1 million ISK.
- 2007
- **Rannis – The Icelandic Centre for Research**

## AWARDS AND GRANTS (continued)

- *Title*: Context-sensitive spell checking.
  - *Project Manager*: Eiríkur Rögnvaldsson, University of Iceland.
  - *Co-applicants*: Hrafn Loftsson and Sigrún Helgadóttir, The Institute of Lexicography, University of Iceland.
  - *Duration*: 2 years. *Grant*: 3.1 million ISK.
- 2006
- **Rannis – The Icelandic Centre for Research**
  - *Title*: Shallow parsing of Icelandic text.
  - *Project Manager*: Eiríkur Rögnvaldsson, University of Iceland.
  - *Co-applicants*: Hrafn Loftsson and Sigrún Helgadóttir, The Institute of Lexicography, University of Iceland.
  - *Duration*: 1 year. *Grant*: 3.8 million ISK.
- 2006
- **University of Iceland**
  - *Title*: Context-sensitive spell checking.
  - *Project Manager*: Eiríkur Rögnvaldsson, University of Iceland.
  - *Co-applicants*: Hrafn Loftsson and Sigrún Helgadóttir, The Institute of Lexicography, University of Iceland.
  - 1. prize in a competition. *Prize*: 500,000 ISK.
- 2006
- **The Icelandic Student Innovation Fund**
  - *Title*: Utilisation of a large lexicon for tagging Icelandic text.
  - *Project Manager*: Hrafn Loftsson.
  - *Co-applicant*: Kristín Bjarnadóttir, The Institute of Lexicography, University of Iceland.
  - *Duration*: 3 months. *Grant*: 220,000 ISK.
- 2003
- **The Icelandic Student Innovation Fund**
  - *Title*: Women and Computer Science.
  - *Project Manager*: Ásrún Matthíasdóttir, University of Iceland.
  - *Co-applicant*: Hrafn Loftsson.
  - *Duration*: 3 months. *Grant*: 220,000 ISK.

## PUBLICATIONS

### *Journal Papers*

- Ellertsson, S. O., Hlynsson, H. D., **Loftsson, H.** and Sigurðsson, E. L. 2023. Triaging Patients With Artificial Intelligence for Respiratory Symptoms in Primary Care to Improve Patient Outcomes: A Retrospective Diagnostic Accuracy Study. *Annals of Family Medicine*, **21(3)**:240–248.
- Ellertsson, S. O., **Loftsson, H.** and Sigurðsson, E. L. 2021. Artificial intelligence in the GPs office: A retrospective study on diagnostic accuracy. *Scandinavian Journal of Primary Health Care*, **39(4)**:448–458.
- **Loftsson, H.** 2008. Tagging Icelandic text: A linguistic rule-based approach. *Nordic Journal of Linguistics*, **31(1)**: 47–72.
- **Loftsson, H.** 2006. Tagging Icelandic text: an experiment with integrations and combinations of taggers. *Language Resources and Evaluation*, **40(2)**: 175–181.
- Matthíasdóttir, Á., Fanngeirsdóttir, K. and **Loftsson, H.** 2004. Women in Computer Science. *Tímarit um mennta-  
rannsóknir*, 1. árg. 2004. FUM, félag um menntarannsóknir.

## PUBLICATIONS (continued)

### *Conference and workshop papers*

- Helgason, M.F., Hlífásson, K.S., Olsen, B., Ellertsson, S.O., **Loftsson, H.**, and Ólafsson, S. 2024. The Development and Feasibility of a Triage System for Use in Primary Care. In *Proceedings of the 12<sup>th</sup> IEEE International Conference on Healthcare Informatics*. Florida, USA.
- Jóhannsson, Ó. A., Arndal, B.H., Jónsson, E.Ö., Ólafsson, S. and **Loftsson, H.** 2024. Evaluating Icelandic Sentiment Analysis Models Trained on Translated Data. In *Proceedings of the 3<sup>rd</sup> Annual Meeting of the Special Interest Group on Under-resourced Languages @ LREC-COLING 2024*. Torino, Italy.
- Daðason, J. F. and **Loftsson, H.** 2024. Unsupervised Outlier Detection for Language-Independent Text Quality Filtering. In *Proceedings of the 3<sup>rd</sup> Annual Meeting of the Special Interest Group on Under-resourced Languages @ LREC-COLING 2024*. Torino, Italy.
- Daðason, J. F. and **Loftsson, H.** 2024. Text Filtering Classifiers for Medium-Resource Languages. In *Proceedings of the Joint International Conference on Computational Linguistics, Language Resources and Evaluation (LREC-COLING 2024)*. Torino, Italy.
- Steingrímsson, S., **Loftsson, H.**, and Way, A. 2023. SentAlign: Accurate and Scalable Sentence Alignment. In *Proceedings of the 2023 Conference on Empirical Methods in Natural Language Processing: System Demonstrations*. Singapore.
- Eggertsson, V., Jóhannesson, B. G., Einarsson, H. and **Loftsson, H.** 2023. Effective Entity Disambiguation in Low-Resource Languages: A Study of Icelandic. In *Proceedings of the 22<sup>nd</sup> IEEE/WIC International Conference on Web Intelligence and Intelligent Agent Technology*. Venice, Italy.
- Steingrímsson, S., Lohar, P., **Loftsson, H.**, and Way, A. 2023. Do Not Discard – Extracting Useful Fragments from Low-Quality Parallel Data to Improve Machine Translation. In *Proceedings of The Second Workshop on Corpus Generation and Corpus Augmentation for Machine Translation (CoCo4MT) at MT Summit*. Macau, China.
- Kárasón, Ö. and **Loftsson, H.** 2023. Is Part-of-Speech Tagging a Solved Problem for Icelandic? In *Proceedings of the 24<sup>rd</sup> Nordic Conference on Computational Linguistics (NoDaLiDa)*. Tórshavn, Faroe Islands.
- Steingrímsson, S., **Loftsson, H.**, and Way, A. 2023. Filtering Matters: Experiments in Filtering Training Sets for Machine Translation. In *Proceedings of the 24<sup>rd</sup> Nordic Conference on Computational Linguistics (NoDaLiDa)*. Tórshavn, Faroe Islands.
- Lindh-Knuutila, T., **Loftsson, H.**, Doval, P. A., Andersson, S., Barkarson, B., Cerezo-Costas, H., Guðnason, J., Gylfason, J.S., Hemminki, J., and Kaalep, H. 2023. Microservices at Your Service: Bridging the Gap between NLP Research and Industry. In *Proceedings of the 24<sup>rd</sup> Nordic Conference on Computational Linguistics (NoDaLiDa)*. Tórshavn, Faroe Islands.
- Skarphéðinsson, N., Smári, S., Lárusdóttir, M. K., Einarsson, H., Khan, A., Nyberg, E., and **Loftsson, H.** 2023. GameQA: Gamified Mobile App for Building Multiple-Domain Question-Answering Datasets. In *Proceedings of the 17<sup>th</sup> Conference of the European Chapter of the Association for Computational Linguistics (EACL): System Demonstrations* (forthcoming). Dubrovnik, Croatia.
- Hlynsson, H. D., Ellertsson, S. O., Daðason, J. F., Sigurðsson, E. L., and **Loftsson, H.** 2022. Semi-supervised Automated Clinical Coding Using International Classification of Diseases. In *Proceedings of the 5<sup>th</sup> International Conference on Natural Language and Speech Processing (ICNLSP 2022)*. Trento, Italy.

## PUBLICATIONS (continued)

- Nikulásdóttir, A. B., Arnardóttir, P., Barkarson, S., Guðnason, J., Gunnarsson, P. D., Ingason, A. K., Jónsson, H. P., **Loftsson, H.**, Óladóttir, H., Rögnvaldsson, E., Sigurðsson, E. F., Sigurgeirsson, A. P., Snæbjarnarson, V., Steingrímsson, S. and Örnólfsson, G. T. 2022. Help Yourself from the Buffet: National Language Technology Infrastructure Initiative on CLARIN-IS. In M. Monachini and M. Eskevich (eds.), *Selected Papers from the CLARIN Annual Conference 2021*. Linköping Electronic Conference Proceedings 189.
- Friðriksdóttir, S. R., Eggertsson, V. Á., Jóhannesson, B. G., Danielsson, H., **Loftsson, H.**, and Einarsson, H. 2022. Building an Icelandic Entity Linking Corpus. In *Proceedings of the workshop 'Dataset Creation for Lower-Resourced Languages', at the 13<sup>th</sup> International Conference on Language Resources and Evaluation (LREC 2022)*. Marseille, France.
- Steingrímsson, S., O'Brien, L., Ingimundarson, F., **Loftsson, H.** and Way, A. 2022. Compiling a Highly Accurate Bilingual Lexicon by Combining Different Approaches. In *Proceedings of the GLOBALEX Workshop on Linked Lexicography, at the 13<sup>th</sup> International Conference on Language Resources and Evaluation (LREC 2022)*. Marseille, France.
- Tadić, M., Farkaš, D., Filko, M., Vasiļevskis, A., Vasiļjevs, A., Ziedīņš, J., Motika, Ž., Fishel, M., **Loftsson, H.**, Guðnason, J., Borg, C., Cortis, K., Attard, J. and Spiteri, D. 2022. National Language Technology Platform for Public Administration. In *Proceedings of the workshop 'Towards Digital Equality', at the 13<sup>th</sup> International Conference on Language Resources and Evaluation (LREC 2022)*. Marseille, France.
- Daðason, J. F. and **Loftsson, H.**. 2022. Pre-training and Evaluating Transformer-based Language Models for Icelandic. In *Proceedings of the 13<sup>th</sup> International Conference on Language Resources and Evaluation (LREC 2022)*. Marseille, France.
- Jónsson, H. P. and **Loftsson, H.** 2022. DMS: A System for Delivering Dynamic Multitask NLP Tools. In *Proceedings of the 14<sup>th</sup> International Conference on Agents and Artificial Intelligence – Volume 1: NLPinAI*. Online.
- Steingrímsson, S., **Loftsson, H.** and Way, A. 2021. PivotAlign: Leveraging High-Precision Word Alignments for Bilingual Dictionary Inference. In *Proceedings of the 4<sup>th</sup> Translation Inference Across Dictionaries (TIAD) shared task. Zaragoza, Spain*. Online.
- Steingrímsson, S., Lohar, P., **Loftsson, H.** and Way, A. 2021. Effective Bitext Extraction From Comparable Corpora Using a Combination of Three Different Approaches. In *Proceedings of the 14<sup>th</sup> Workshop on Building and Using Comparable Corpora (BUCC)*. Varna, Bulgaria (Online).
- **Loftsson, H.** and Matthíasdóttir, Á. 2021. Moving Classes in a Large Programming Course Online: An Experience Report. In *Proceedings of the 2<sup>nd</sup> International Computer Programming Education Conference*. Braga, Portugal (Online).
- Daðason, J. F., **Loftsson, H.**, Sigurðardóttir, S. and Björnsson, P. 2021. IceSum: An Icelandic Text Summarization Corpus. In *Proceedings of the Conference of the North American Chapter of the Association for Computational Linguistics (NAACL): Student Research Workshop*. Mexico City, Mexico (Online).
- Steingrímsson, S., **Loftsson, H.** and Way, A. 2021. CombAlign: a Tool for Obtaining High-Quality Word Alignments. In *Proceedings of the 23<sup>rd</sup> Nordic Conference of Computational Linguistics (NODALIDA-2021)*. Reykjavik, Iceland (Online).
- Ingólfssdóttir, S. L., Guðjónsson, Á. A. and **Loftsson, H.** 2020. Named Entity Recognition for Icelandic: Annotated Corpus and Models. In *Proceedings of the 8<sup>th</sup> International Conference on Statistical Language and Speech Processing (SLSP 2020)*. Cardiff, United Kingdom.

## PUBLICATIONS (continued)

- Jónsson, H. P., Símonarson, H. B., Snæbjarnarson V., Steingrímsson, S., and **Loftsson, H.** 2020. Experimenting with Different Machine Translation Models in Medium-Resource Settings. In *Proceedings of the 23<sup>rd</sup> International Conference on Text, Speech and Dialogue (TSD 2020)*. Brno, Czech Republic (Online).
- Steingrímsson, S., **Loftsson, H.** and Way, A. 2020. Effectively Aligning and Filtering Parallel Corpora under Sparse Data Conditions. In *Proceedings of the ACL Student Research Workshop*. Seattle, Washington (Online).
- Matthíasdóttir, Á. and **Loftsson, H.** 2020. Improving the implementation of a first-semester programming course. In *Proceedings of the 16<sup>th</sup> International CDIO Conference*. Bangkok, Thailand.
- Nikulásdóttir, A.B., Guðnason, J., Ingason, A. K., **Loftsson, H.**, Rögnvaldsson, E., Sigurðsson, E. F. and Steingrímsson, S. 2020. Language Technology Programme for Icelandic 2019-2023. In *Proceedings of the 12<sup>th</sup> International Conference on Language Resources and Evaluation (LREC 2020)*. Marseille, France.
- Daðason, J. F., Mollbert, D., **Loftsson, H.** and Bjarnadóttir, K. 2020. Kvistur: a BiLSTM Compound Splitter for Icelandic. In *Proceedings of the 12<sup>th</sup> International Conference on Language Resources and Evaluation (LREC 2020)*. Marseille, France.
- **Loftsson, H.** and Matthíasdóttir, Á. 2019. Using Flipped Classroom and Team-Based Learning in a First-Semester Programming Course: An Experience Report. In *Proceedings of TALE 2019, IEEE International Conference on Teaching, Assessment, and Learning for Engineering*. Yogyakarta, Indonesia.
- Ingólfssdóttir S. L., Þorsteinsson, S. and **Loftsson, H.** 2019. Towards High Accuracy Named Entity Recognition for Icelandic. In *Proceedings of the 22<sup>nd</sup> Nordic Conference of Computational Linguistics (NODALIDA-2019)*. Turku, Finland.
- Ingólfssdóttir S. L., **Loftsson, H.**, Daðason, J. F. , and Bjarnadóttir, K. 2019. Nefnir: A high accuracy lemmatizer for Icelandic. In *Proceedings of the 22<sup>nd</sup> Nordic Conference of Computational Linguistics (NODALIDA-2019)*. Turku, Finland.
- Steingrímsson, S., Kárasón, Ö. and **Loftsson, H.** 2019. Augmenting a BiLSTM tagger with a Morphological Lexicon and a Lexical Category Identification Step. In *Proceedings of Recent Advances in Natural Language Processing (RANLP 2019)*. Varna, Bulgaria.
- Þorsteinsson, V., Óladóttir, H. and **Loftsson, H.** 2019. A Wide-Coverage Context-Free Grammar for Icelandic and an Accompanying Parsing System. In *Proceedings of Recent Advances in Natural Language Processing (RANLP 2019)*. Varna, Bulgaria.
- Matthíasdóttir, Á. and **Loftsson, H.** 2019. Flipped Learning in a Programming Course: Students' Attitudes. In *Proceedings of the 15<sup>th</sup> International CDIO Conference*. Aarhus, Denmark.
- Ingason, A. K., **Loftsson, H.**, Rögnvaldsson, E., Sigurðsson, E. F. and Wallenberg, J. C. 2014. Rapid Deployment of Phrase Structure Parsing for Related Languages: A Case Study of Insular Scandinavian. In *Proceedings of the 9<sup>th</sup> International Conference on Language Resources and Evaluation (LREC 2014)*. Reykjavik, Iceland.
- Helgadóttir, S., **Loftsson, H.** and Rögnvaldsson, E. Correcting Errors in a New Gold Standard for Tagging Icelandic Text. In *Proceedings of the 9<sup>th</sup> International Conference on Language Resources and Evaluation (LREC 2014)*. Reykjavik, Iceland.
- **Loftsson, H.** and Östling, R. 2013. Tagging a Morphologically Complex Language Using an Averaged Perceptron Tagger: The Case of Icelandic. In *Proceedings of the 19<sup>th</sup> Nordic Conference of Computational Linguistics (NODALIDA-2013)*. Oslo, Norway.



## PUBLICATIONS (continued)

- **Loftsson, H.** 2013. Tagging the Past: Experiments Using the Saga Corpus. In *Proceedings of the 19<sup>th</sup> Nordic Conference of Computational Linguistics (NODALIDA-2013)*. Oslo, Norway.
- Volodina, E., Borin, L., **Loftsson, H.**, Arnbjörnsdóttir, B. and Leifsson, G.Ö. 2012. Waste not, want not: Towards a system architecture for ICALL based on NLP component re-use. In *Proceeding of the SLTC 2012 workshop on NLP for CALL. Linköping Electronic Conference Proceedings*, **80**: 47–58.
- Volodina, E., **Loftsson, H.**, Arnbjörnsdóttir, B., Borin, L. and Leifsson, G.Ö. 2012. Towards a system architecture for ICALL. In *Proceedings of the ICCE Conference on Technology Enhanced Language Learning (TELL), ICCE 2012 – The 20<sup>th</sup> International Conference on Computers in Education*. Singapore.
- Helgadóttir, S., Svavarsdóttir, Á., Rögnvaldsson, E., Bjarnadóttir, K. and **Loftsson, H.** 2012. The Tagged Icelandic Corpus (MÍM). In *Proceedings of the SaLTMiL-AfLaT Workshop on “Language technology for normalisation of less-resourced languages”, 8<sup>th</sup> International Conference on Language Resources and Evaluation (LREC 2012)*. Istanbul, Turkey.
- Guðnason, J., Kjartansson, O., Jóhannsson J., Carstensdóttir, E., Vilhjálmsson, H., **Loftsson, H.**, Helgadóttir, S., Jóhannsdóttir, K. and Rögnvaldsson, E. 2012. Almennarómur: An Open Icelandic Speech Corpus. In *Proceedings of the Third International Workshop on Spoken Language Technologies for Under-resourced languages (SLTU 2012)*. Cape Town, South Africa.
- **Loftsson, H.**, Helgadóttir, S. and Rögnvaldsson, E. 2011. Using a morphological database to increase the accuracy in PoS tagging. In *Proceedings of Recent Advances in Natural Language Processing (RANLP 2011)*. Hissar, Bulgaria.
- Brandt, M. D., **Loftsson, H.**, Sigurbórsson, H. and Tyers, F. M. 2011. Apertium-IceNLP: A rule-based Icelandic to English machine translation system. In *Proceedings of the 15<sup>th</sup> Annual Conference of the European Association for Machine Translation (EAMT-2011)*. Leuven, Belgium.
- **Loftsson, H.**, Yngvason, J. H., Helgadóttir, S. and Rögnvaldsson, E. 2010. Developing a PoS-tagged corpus using existing tools. In *Proceedings of “Creation and use of basic lexical resources for less-resourced languages”, workshop at the 7<sup>th</sup> International Conference on Language Resources and Evaluation, LREC 2010*. Valetta, Malta.
- Henrich, V., Reuter, T. and **Loftsson, H.** 2009. CombiTagger: A System for Developing Combined Taggers. In *K. Jokinen and E. Bick (eds.), Proceedings of the 22<sup>nd</sup> International FLAIRS Conference, Special Track: “Applied Natural Language Processing”*. Sanibel Island, Florida, USA.
- **Loftsson, H.**, Kramarczyk, I., Helgadóttir, S. and Rögnvaldsson, E. 2009. Improving the PoS tagging accuracy of Icelandic text. In *Proceedings of the 17<sup>th</sup> Nordic Conference of Computational Linguistics (NODALIDA-2009)*. Odense, Denmark.
- Ingason, A. K., Jóhannsson, S. B., Helgadóttir, S., **Loftsson, H.** and Rögnvaldsson, E. 2009. Context-Sensitive Spelling Correction and Rich Morphology. In *Proceedings of the 17<sup>th</sup> Nordic Conference of Computational Linguistics (NODALIDA-2009)*. Odense, Denmark.
- Rögnvaldsson, E., **Loftsson, H.**, Bjarnadóttir, K., Helgadóttir, S., Nikulásdóttir, A. B., Whelpton, M. and Ingason, A. I. 2009. Icelandic Language Resources and Technology: Status and Prospects. In *Proceedings of the NoDaLiDa 2009 Workshop “Nordic Perspectives on the CLARIN Infrastructure of Common Language Resources”*. Odense, Denmark.
- **Loftsson, H.** 2009. Correcting a POS-Tagged Corpus Using Three Complementary Methods. In *Proceedings of the 12<sup>th</sup> Conference of the European Chapter of the ACL (EACL 2009)*. Athens, Greece.

## PUBLICATIONS (continued)

- Ingason, A. K., Helgadóttir, S., **Loftsson, H.** and Rögnvaldsson, E. 2008. A Mixed Method Lemmatization Algorithm Using Hierarchy of Linguistic Identities (HOLI). In B. Nordström and A. Ranta (eds.), *Advances in Natural Language Processing, 6<sup>th</sup> International Conference on NLP, GoTAL 2008, Proceedings*. Gothenburg, Sweden.
- **Loftsson, H.** and Rögnvaldsson, E. 2008. Linguistic richness and technical aspects of an incremental finite-state parser. In *Proceedings of “Partial Parsing 2008”, workshop at the 6<sup>th</sup> International Conference on Language Resources and Evaluation, LREC 2008*. Marrakech, Morocco.
- **Loftsson, H.** and Rögnvaldsson, E. 2007. IceNLP: A Natural Language Processing Toolkit for Icelandic. In *Proceedings of InterSpeech 2007, Special session: “Speech and language technology for less-resourced languages”*. Antwerp, Belgium.
- **Loftsson, H.** and Rögnvaldsson, E. 2007. IceParser: An Incremental Finite-State Parser for Icelandic. In J. Nivre, H.-J. Kaalep, K. Muischnek and M. Koit (eds.), *Proceedings of the 16<sup>th</sup> Nordic Conference of Computational Linguistics (NODALIDA-2007)*. Tartu, Estonia.
- **Loftsson, H.** 2007. Tagging Icelandic Text using a Linguistic and a Statistical Tagger. In *Proceedings of Human Language Technologies 2007: The Conference of the North American Chapter of the ACL*. Rochester, NY, USA.
- **Loftsson, H.** 2006. Tagging a Morphologically Complex Language Using Heuristics. In T. Salakoski, F. Ginter, S. Pyysalo, and T. Pahikkala (eds.), *Advances in Natural Language Processing, 5<sup>th</sup> International Conference on NLP, FinTAL 2006, Proceedings*. Turku, Finland.

### *Extended abstracts and posters*

- Vasilevskis, A., Ziedīņš, J., Tadić, M., Motika, Ž., Fishel, M., **Loftsson, H.**, Guðnason, J., Borg, C., Cortis, K., Attard, J. and Spiteri, D. 2022. NLTP: National Language Technology Platform. In *Proceedings of New Trends in Translation and Technology*. Rhodes Island, Greece.
- Vasilevskis, A., Ziedīņš, J., Tadić, M., Motika, Ž., Fishel, M., **Loftsson, H.**, Guðnason, J., Borg, C., Cortis, K., Attard, J. and Spiteri, D. 2022. National Language Technology Platform (NLTP): overall view. In *Proceedings of the 23<sup>rd</sup> Annual Conference of the European Association for Machine Translation (EAMT)*. Ghent, Belgium.
- Nikulásdóttir A. B., Arnardóttir, P., Guðnason, J., Gunnarsson, P. D., Ingason, A.K., Jónsson, H. P., **Loftsson, H.**, Óladóttir, H., Sigurðsson, E. F., Sigurgeirsson A. P., Snæbjarnarson, V. and Steingrímsson, S. 2021. Help Yourself from the Buffet: National Language Technology Infrastructure Initiative on CLARIN-IS. In *Proceedings of the CLARIN Annual Conference*. Online.
- Adams, E. S., Hazzan, O., **Loftsson, H.** and Young, A. 2003. International perspective of women and computer science. In *Proceedings of the 34<sup>th</sup> SIGCSE technical symposium on Computer science education, SigCSE '03*. Reno, Nevada, USA.

### *Edited volumes*

- **Loftsson, H.**, Rögnvaldsson, E. and Helgadóttir, S. (eds). 2010. *Advances in Natural Language Processing. 7<sup>th</sup> International Conference on NLP, IceTAL 2010*, Reykjavik, Iceland, August 2010, Proceedings. © 2010 Springer.

### *Non-refereed work*

- Ellertsson, S., Loftsson, H., Ólafsson, S. and Sigurðsson, E. L. 2023. Notkun gervigreindar í heilbrigðiskerfinu [The use of AI in the health system]. *Tölvumál journal*. November 2023.

## PUBLICATIONS (continued)

- Matthíasdóttir, Á. and Loftsson, H. 2020. Vendikennsla í tölvunarfræði [Flipped classroom in Computer Science]. *Tölvumál journal*. November 2020.
- Loftsson, H. 2014-2015. Hugsaðu eins og tölvunarfræðingur. An Icelandic translation of the book “How to Think Like a Computer Scientist”, by Allen B. Downey.
- Loftsson, H. 2010. Nýtt íslenskt-enskt grófbýðingarkerfi frá Máltækniisetri [A new Icelandic-English shallow-transfer machine translation system from the Icelandic Centre for Language Technology]. *Reykjavik University magazine*. March 2010.
- Loftsson, H. 2009. Máltækni í HR [Language Technology at RU]. *Reykjavik University magazine*. May 2009.
- Loftsson, H. 2008. Markari og hlutabáttari fyrir íslenskan texta [A tagger and a parser for Icelandic text]. *Tölvumál journal*. February 2008.
- Loftsson, H. and Ingason, A. K. 2007. IceNLP – A Natural Language Processing Toolkit for Icelandic: User guide.
- Loftsson, H. and Rögnvaldsson, E. 2006. A shallow syntactic annotation scheme for Icelandic text. Technical Report RUTR-SSE06004, Department of Computer Science, Reykjavik University.

## SUPERVISION OF STUDENT RESEARCH WORK

### *Ph.D. students*

- |           |  |
|-----------|--|
| 2021-2025 | • Steindór Oddur Ellertsson, Univeresity of Iceland. Thesis: The use of machine learning models for diagnostic and outcome prediction in primary care. Supervisor: Emil Lárus Sigurðsson. Co-supervisor: Hrafn Loftsson. |
| 2019-2025 | • Jón Friðrik Daðason, Reykjavik University. Thesis: Language Representation Models for Low and Medium-Resource Languages. Supervisor: Hrafn Loftsson.   |
| 2018-2023 | • Steinþór Steingrímsson, Reykjavik University. Thesis: Effectively Compiling Parallel Corpora for Machine Translation in Resource-Scarce Conditions. Supervisor: Hrafn Loftsson. Co-supervisor: Andy Way.               |

### *M.Sc. theses*

- |             |   |
|-------------|---|
| 2022        | • Róbert Badí Baldursson. M.Sc., Reykjavik University. Thesis (60 ECTS): Title to be determined.  |
| Fall 2022   | • Örvar Hafsteinn Kárasón. M.Sc., Reykjavik University. Project (30 ECTS): Title to be determined.  |
| 2021-2022   | • Benedikt Geir Jóhannesson. M.Sc., Reykjavik University. Thesis (60 ECTS): Entity Linking for Icelandic.   |
| Spring 2021 | • Tinna Þ. Sigurðardóttir. M.Sc., Reykjavik University. Project (30 ECTS): Representing Icelandic in Corpora.   |
| Spring 2021 | • Gunnar Pálsson. M.Sc., Reykjavik University. Project (30 ECTS): Adapting and improving a shallow parser.  |
| 2019-2021   | • Ásmundur Guðjónsson. M.Sc., Reykjavik University. Thesis (60 ECTS): Named Entity Recognition for Icelandic: Comparing and combining different machine learning methods. |
| 2019-2020   | • Svanhvít L. Ingófsdóttir. M.Sc., Reykjavik University. Thesis (60 ECTS): Named Entity Recognition for Icelandic – annotated corpus and baselines.                       |
| 2015-2016   | • Hulda Óladóttir. M.A., University of Iceland (co-supervision). Thesis (60 ECTS): Upplýsingaútdráttur - Nýting upplýsingaramma til málmyndunar [Information Extraction]. |
| Spring 2014 | • Karin Christiansen. M.Sc., Reykjavik University. Project (30 ECTS): Summarization of Icelandic texts.   |
| 2011-2013   | • Guðmundur Örn Leifsson. M.Sc., University of Iceland. Thesis (60 ECTS): Intelligent Writing Support for Second Language Lerner of Icelandic using Web Services.         |
| 2008-2010   | • Martha Dís Brandt. M.Sc., January 2011, Reykjavik University. Thesis (60 ECTS): Developing an Icelandic to English Shallow Transfer Machine Translation System.         |

## SUPERVISION OF STUDENT RESEARCH WORK (continued)

- 2007-2009      • Ida Kramarczyk. M.Sc., June 2009, Reykjavik University. Thesis (60 ECTS): Improving the tagging accuracy of Icelandic text.
- 2008-2009      • Timo Reuter and Verena Henrich. M.Sc., March 2009, University of Applied Sciences, Darmstadt (co-supervision). Thesis: LISGrammarChecker: Language Independent Statistical Grammar Checker.

### *M.Sc. independent studies*

- Spring 2023      • Örvar Hafsteinn Kárasón. Reykjavik University. Independent Study: Data-driven Part-of-Speech Taggers for Icelandic: Comparison and Error Analysis.
- Fall 2010        • Hlynur Sigurþórsson. Reykjavik University. Independent Study: Daemonizing and enhancing IceNLP for the purpose of machine translation.
- Fall 2010        • Andreas Völlger (exchange student). University of Applied Sciences, Darmstadt. Tagging and parsing German using Spejd.
- Fall 2008        • Timo Reuter and Verena Henrich (exchange students) University of Applied Sciences, Darmstadt. CombiTagger: A system for developing combined taggers.

### *B.Sc. theses*

- Fall 2023        • Ólafur Aron Jóhannsson, Birkir Arndal, and Eysteinn Örn Jónsson, B.Sc., January 2024, Reykjavik University. Thesis: Evaluating Icelandic Sentiment Analysis Models Trained on Translated Data.
- Spring 2023      • Baldur Olsen, Kári Steinn Hlifarsson, and Magnús Friðrik Helgason. B.Sc., June 2023, Reykjavik University. Thesis: A Dual Interface Approach for Patient Diagnosis and Doctor Consultation with the Help of Artificial Intelligence.
- Fall 2018        • Svanhvít Lilja Ingólfssdóttir and Sigurjón Þorsteinsson. B.Sc., February 2019, Reykjavik University. Thesis: Named Entity Recognition for Icelandic.
- Spring 2010      • Svavar K. Lúthersson. B.Sc., June 2010, Reykjavik University. Thesis: Tagging and parsing a large corpus.
- Spring 2009      • Aðalsteinn Tryggvason. B.Sc., June 2010, Reykjavik University. Thesis: Named Entity Recognition for Icelandic.
- Spring 2009      • Hlynur Sigurþórsson and Pétur Sigurðsson. B.Sc., June 2010, Reykjavik University. Thesis: Using IceNLP in Computer-Assisted Language Learning.
- Fall 2008        • Kristjana Guðjónsdóttir. B.Sc., January 2009, Reykjavik University. Thesis: A Prototype of an Icelandic Grammar Checker.
- Spring 2007      • Frank A. B. Cassata. B.Sc., June 2007, Reykjavik University. Thesis: Automatic thesaurus extraction for Icelandic.

### *B.Sc. independent studies / research opportunity*

- Spring 2014      • Ólafur P. Geirsson, Guðmundur Harðarson, Guðmundur Þ. Guðmundsson. Reykjavik University. Undergraduate Research Opportunity: Orðspor: Labeling named entities with computer games.
- Fall 2012        • Emmanuel Günther. University of Applied Sciences, Darmstadt (co-supervision). Undergraduate Research Opportunity: An Intelligent BOT.
- Fall 2011        • Ólafur Waage. Reykjavik University. Independent Study: Continued development of Apertium-IceNLP: A rule-based Icelandic to English machine translation system.
- Fall 2009        • Jökull H. Yngvason. Reykjavik University. Independent Study: Automatic extraction of verb subcategorization frames for Icelandic

### *The Icelandic Student Innovation Fund*

- Summer 2023    • Njáll Skarphéðinsson, Eysteinn Örn Jónsson, and Logi Sigurðarson. M.Sc. and B.Sc. student,s Reykjavik University. Project: Spanning the Gap: Boosting Question-Answering by Standardizing Answer Spans.

## SUPERVISION OF STUDENT RESEARCH WORK (continued)

- Summer 2020 • Gunnar Pálsson. B.Sc. student, Reykjavik University. Project: Pre-Nominal Adjective Order in Icelandic.
- Summer 2013 • Ólafur P. Geirsson. B.Sc. student, Reykjavik University. Project: A language independent Question-Answering System.
- Summer 2010 • Ragnar L. Sigurðsson. B.Sc. student, Reykjavik University. Project: An improved shallow parser for Icelandic.
- Summer 2009 • Jökull H. Yngvason. B.Sc. student, Reykjavik University. Project: Developing a PoS-tagged corpus using existing tools.
- Summer 2006 • Anna M. Sigurðardóttir. B.Sc. student, Reykjavik University. Project: Utilisation of a large lexicon for tagging Icelandic text.

### *Ph.D./M.Sc. committees*

- Spring 2024 • Elena Ovsianikova. M.Sc. Reykjavik University. Project (30 ECTS): IceSpike: Investigating Spiking Neural Networks for Icelandic Text Classification. Examiner.
- Spring 2024 • Þórir Hrafn Harðarson. M.Sc. Reykjavik University. Project (30 ECTS): Aligning language models to professional domains using preference training. Committee member.
- Spring 2022 • Elías Ingi Björgvinsson. M.Sc. Reykjavik University. Project (30 ECTS): Software service oriented framework for multilingual conversational agents. Examiner.
- Fall 2021 • Vésteinn Snæbjarnarson. M.Sc. University of Iceland. Thesis (60 ECTS): Automated methods for Question-Answering in Icelandic. Examiner.
- Fall 2020 • Egill Anton Hlöðversson. M.Sc. Reykjavik University. Thesis (60 ECTS): Spoken Language Understanding for Icelandic Airline Reservation System, and Translated Corpus. Examiner.
- Fall 2020 • Branislav Bédi. Ph.D. University of Iceland. Thesis: Learning Icelandic in Virtual Reykjavik: Simulating real-life conversations with Embodied Conversational Agents using multimodal clarification requests. Opponent.
- Fall 2019 • Guðmundur Páll Kjartansson. M.Sc. Reykjavik University. Project (30 ECTS): Experimenting with Time and Depth Control in Chess Engines. Examiner.
- Spring 2019 • Julia Elisabeth Haidn. M.Sc. Reykjavik University. Project (30 ECTS): Flight Recommender System Using Implicit Feedback. Examiner.
- Spring 2018 • Anna Vigdís Rúnarsdóttir. M.Sc. Reykjavik University. Project (30 ECTS): Re-Scoring Word Lattices from Automatic Speech Recognition System Based on Manual Error Corrections. Examiner.
- Fall 2013 • Tihomir Rangelov. M.A. University of Iceland. Project (30 ECTS): Shallow-Transfer Rule-Based Machine Translation between Icelandic and Swedish. External reviewer.
- Spring 2013 • Francis Morton Tyers. Ph.D. Universitat d'Alacant. Thesis: Feasible lexical selection for rule-based machine translation. External reviewer.
- Fall 2012 • Yvonne Adesam. Ph.D. Stockholm University. Thesis: Multilingual Trees – Investigating High-quality Cross-lingual Parallel Corpus Processing. Committee member.
- Spring 2012 • Jón Daðason. M.Sc., June 2012, University of Iceland. Thesis (60 ECTS): Post-correction of Icelandic OCR text. Examiner.
- Spring 2011 • Valdís Sigurþórsdóttir. M.Sc., June 2011, Reykjavik University. Thesis (60 ECTS): Towards Automatic Generation of Realistic Web Query Sequences. Examiner.