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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 research field is Natural Language Processing, in particular developing methods and tools for morphological analysis, part-of-speech tagging, shallow parsing, machine translation and corpus construction.

EDUCATION

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

WORK EXPERIENCE

- 08/2011-Present • **Associate Professor in the School of Computer Science, Reykjavik University.**
- Research in the field of Natural Language Processing.
 - Supervision of research-oriented B.Sc. and M.Sc. students
 - Courses taught at the B.Sc. and M.Sc. level.
- 11/2003-08/2011 • **Assistant Professor in the School of Computer Science, Reykjavik University.**
- Research in the field of Natural Language Processing.
 - Supervision of research-oriented B.Sc. and M.Sc. students
 - 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.

WORK EXPERIENCE (continued)

- 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. Responsibility of trading systems.
- 02/1995-10/1997
 - **Verðbréfamarkaður Íslandsbanka (VÍB), Reykjavik.**
 - Chief Information Officer.
 - Design and implementation of trading systems. Languages: 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: C/C++ and Smalltalk.
- 02/1989-08/1990
 - **Íslenskt hugvit hf., Reykjavik.**
 - Design and implementation of a securities system. Language: RPG/400.
- 06/1988-01/1989
 - **Talnakönnun hf., Reykjavik.**
 - Programming of a securities system. Language: RPG.

TEACHING EXPERIENCE

- Fall 2011
 - Programming, Web Mining
- Spring 2011
 - Data Structures
- Fall 2010
 - Natural Language Processing, Programming, Independent Study
- Spring 2010
 - Compilers
- Fall 2009
 - Natural Language Processing, Programming Languages, Independent Study
- Fall 2008
 - Natural Language Processing, Programming Languages
- Spring 2008
 - Compilers, Independent Study
- Fall 2007
 - Natural Language Processing
- Spring 2007
 - Compilers
- Fall 2006
 - Programming Languages
- Spring 2006
 - Introduction to Language Analysis
- Spring 2004
 - Compilers
- Fall 2002
 - Programming Languages
- Spring 2002
 - Compilers
- Fall 2001
 - Programming Languages
- Spring 2001
 - Compilers, Computer Graphics
- Fall 2000
 - Programming Languages
- Spring 2000
 - Compilers, Computer Graphics
- Fall 1999
 - Programming Languages

PUBLICATIONS

Journal Papers

- Loftsson, H. 2008. Tagging Icelandic text: A linguistic rule-based approach. *Nordic Journal of Linguistics*, **31(1)**, 47–72.

PUBLICATIONS (continued)

- 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 menntarannsóknir*, 1. árg. 2004. FUM, félag um menntarannsóknir.

Conference and workshop papers

- 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., Sigurþórsson, H. and Tyers, F. M. 2011. Apertium-IceNLP: A rule-based Icelandic to English machine translation system. In Proceedings of the 15th 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 7th 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 22nd 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 17th 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 17th 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 12th Conference of the European Chapter of the ACL (EACL 2009)*. Athens, Greece.
- 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, 6th 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 6th 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.

PUBLICATIONS (continued)

- 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 16th 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, 5th International Conference on NLP, FinTAL 2006, Proceedings*. Turku, Finland.

Edited volumes

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

Non-refereed work

- 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 Rögnvaldsson, E. 2006. A shallow syntactic annotation scheme for Icelandic text. Technical Report RUTR-SSE06004, Department of Computer Science, Reykjavik University.

SOFTWARE

- Software development is an integrated part of my research, as witnessed, for example, by the following systems:

IceNLP – an open source NLP toolkit, implemented in Java, for analyzing and processing Icelandic text. Available for download at <http://icenlp.sourceforge.net>.

CombiTagger – an open source system, implemented in Java, for developing and evaluating combined taggers. Available for download at <http://combitagger.sourceforge.net>.

AWARDS AND GRANTS

- 2011
 - **NordPlus – Nordiske Sprog og Kultur.**
 - *Title:* A System Architecture for Intelligent Computer-Assisted Language Learning.
 - *Project Manager:* Hrafn Loftsson, Reykjavik University.
 - *Co-applicant:* 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.

AWARDS AND GRANTS (continued)

- *Co-applicant*: 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-applicant*: 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-applicant*: 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.**
 - *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.

AWARDS AND GRANTS (continued)

- *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.

SERVICES

- Spring 2011
- Program Committee member of *NoDaLiDa 2011* – The 18th Nordic Conference of Computational Linguistics, Riga, Latvia.
- Fall 2010
- Program Committee member of *FreeRBMT11* – Second International Workshop on Free/Open-Source Rule-Based Machine Translation, Barcelona, Spain.
- Spring 2010-Present
- Member of the *Curriculum Council* at Reykjavik University.
- Spring 2010
- Selection Committee member of *Ordid.is*, a contest regarding inventive use of the Morphological Database of Icelandic Inflections.
- Spring 2010
- Program Committee member of 7th *SaLTMiL Workshop* on “Creation and use of basic lexical resources for less-resourced languages”, LREC 2010, Valetta, Malta.
- Fall 2009-Summer 2010
- Program Committee Chair of *IceTAL 2010* – 7th International Conference on Natural Language Processing, Reykjavik, Iceland.
- Fall 2009
- Program Committee member of *FreeRBMT09* – First International Workshop on Free/Open-Source Rule-Based Machine Translation, Alicante, Spain.
- Spring 2009
- Reviewer for the *National Science Foundation*, USA.
- Fall 2007-Fall 2011
- Chairman of the *Undergraduate Studies Council* at the School of Computer Science, Reykjavik University.
- Spring 2006
- Reviewer for the *Journal of Natural Language Engineering*.
- Fall 2005-Present
- Board member of *The Icelandic Centre for Language Technology*.
- Fall 2002-Spring 2004
- Chairman of the board of Reykjavik University *Netlab*.
- Spring 2001
- Reviewer for *Rannis – The Icelandic Research Council*.
- Fall 2000
- Reviewer for *Rannis – The Icelandic Research Council*.

DEMOS/POSTERS

- 09/2010
- **A web service for machine translation from Icelandic to English – Demo.**
 - Researchers’ Night Science festival. Reykjavik, Iceland.
- 09/2009
- **Analysing Icelandic text and translating to English – Demo.**
 - Researchers’ Night Science festival. Reykjavik, Iceland.
- 10/2007
- **IceNLP: A Natural Language Processing Toolkit for Icelandic – Demo.**
 - Artificial Intelligence Festival, Reykjavik, Iceland.
- 10/2006
- **Shallow parsing of Icelandic text – Demo.**
 - Swedish Language Technology Conference, Gothenburg, Sweden.

DEMOS/POSTERS (continued)

- 04/2006 • **Shallow parsing of Icelandic text – Demo.**
- Artificial Intelligence Festival, Reykjavik, Iceland.

ACTIVITIES AND OUTREACH

- Fall 2010 • Erasmus teacher exchange visit to University of Applied Sciences, Darmstadt, Germany. November 10-13.
- Fall 2009 • Erasmus teacher exchange visit to University of Applied Sciences, Darmstadt, Germany. November 26-29.
- Spring 2009 • Research visit to University of Pennsylvania, USA. March 19-27.
- Spring 2009 • Research visit to University of Alicante, Spain. February 2-18.

INVITED TALKS

- 12/2011 • **Tagging Icelandic: The development of recent years.**
- Seminar series: *The Icelandic Centre for Language Technology*. Reykjavik, Iceland.
- 03/2011 • **Tagging and correcting a new gold standard for Icelandic.**
- *Hugvísindaping 2011*. Reykjavik, Iceland.
- 03/2009 • **Shallow-transfer machine translation**
- *Hugvísindaping 2009*. Reykjavik, Iceland.
- 01/2009 • **Correcting a PoS-tagged corpus using three complementary methods.**
- Seminar series: *The Icelandic Centre for Language Technology*. Reykjavik, Iceland.
- 02/2007 • **Tagging Icelandic text: An experiment with integrations and combinations of taggers.**
- Seminar series: *The Icelandic Centre for Language Technology*. Reykjavik, Iceland.
- 01/2007 • **Shallow parsing of Icelandic text.**
- *The Rask conference*, Reykjavik, Iceland.
- 05/2006 • **Shallow parsing of Icelandic text.**
- *The Icelandic Language Technology conference*, Reykjavik, Iceland.
- 05/2006 • **A linguistic rule-based tagger for Icelandic.**
- *The Icelandic Language Technology conference*, Reykjavik, Iceland.
- 09/2003 • **Does education shape the future or does the future shape education?**
- *Skýrslutæknifélag conference*, “Is the future now?”, Reykjavik, Iceland.
- 03/2003 • **Women and Computer Science.**
- *The UT2003 conference*, Akureyri, Iceland.
- 02/2003 • **International Perspective of Women and Computer Science.**
- *The SIGCSE 2003 conference*, Nevada, USA.
- 03/2002 • **Computer Science education in Reykjavik University - Looking ahead.**
- *The UT2002 conference*, Reykjavik, Iceland.

PUBLIC APPEARANCES

- 03/2010 • *Bylgjan radio*: An interview on Machine Translation.
- 01/2009 • *Víðskiptablaðið newspaper*: An article on the political situation in Iceland.
- 11/2007 • *Víðskiptablaðið newspaper*: An article on the Icelandic language and Language Technology.

PUBLIC APPEARANCES (continued)

- 02/2007 • *Morgunblaðið newspaper*: An interview on POS tagging.
- 12/2006 • *Bylgjan radio*: An interview on Machine Translation.
- 07/2003 • *Morgunblaðið newspaper*: An article on Computer Science education.
- 06/2003 • *Stöð 2 television*: An interview on the decrease of Computer Science students.
- 06/2003 • *Morgunblaðið newspaper*: An interview on the decrease of Computer Science students.
- 04/2003 • *Morgunblaðið newspaper*: An interview on a new MSc program in Computer Science.
- 03/2003 • *Morgunblaðið newspaper*: An article on education and research in technical subjects.