

Saad Mahamood

Nationality: British

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PROFILE

A computational linguist with academic experience in building and researching AI-based Natural Language Generation systems that convert large datasets into textual summaries. I have extensive experience of working alongside domain experts. I'm also capable of working as part of a team or individually, and able to be inventive to research and solve real-world problems. I am looking to broaden my experiences by tackling new challenges. Additionally, I hope that my research & development skills will prove to be useful assets for a future employer as well.

EDUCATION

2006-2010 **University of Aberdeen – PhD in Computing Science**

2005-2006 **University of Sussex – MSc Informatics**

2001-2005 **University of Wales, Aberystwyth – BSc Computing Science**

PHD DISSERTATION

Thesis Title: "Generating affective Natural Language for Parents of Neonatal Infants."

My PhD focused on the development of a Natural Language Generation (NLG) based system to convert clinical neonatal data into automatic daily summaries for parents of babies in Neonatal Intensive Care. This was done by summarising the information in a baby's electronic patient record to produce reports focusing on matters of most interest to the parent. My thesis also focused on the informational and emotional needs of parents and tried to understand how these needs could be met by generating tailored automatic reports. During my PhD I constructed a prototype NLG system to generate such reports for parents and evaluated this system with parents that previously had a baby in neonatal care.

WORK EXPERIENCE

NLG Expert & Data Scientist, trivago N.V., Düsseldorf, Germany **March 2018 - Present**

Employed by trivago as an expert to help build NLG data-to-text solutions. In particular, helping to generate accommodation descriptions automatically with a high degree of content and linguistic variation for the purposes of search engine optimisation, updatability, coverage, and to inform users.

Responsibilities also include NLP and Data Science related tasks as part of Hotel Profiling. I have also worked to help write and review research papers for academic conferences.

Senior Natural Language Generation Engineer, Arria NLG plc., Aberdeen **August 2012 - February 2018**

Employed by Arria NLG to research and develop the creation of new generic tools that can enable the quicker/easier production of NLG systems for commercial clients. In the past most NLG systems contained many bespoke software components specific to a particular big data client, thus making reuse inherently difficult. Recently, I have been involved in helping to build a new NLG microplanner and multilingual (English and German) realiser that allows for the generation of texts in more than one language from a given syntactical sentence representation. This has involved dealing with aspects such as aggregation, referring expression generation, syntax, morphology, morphophonology, and orthography.

I have direct experience working and engaging with commercial clients to deliver NLG based solutions. I have also taken the lead in an academic research paper within a commercial environment and helping to review a patent application based directly on the intellectual property that I've worked on.

In my spare time, I help to maintain the open source Java *SimpleNLG* surface realiser project (<https://github.com/simplenlg/simplenlg>). This has mainly involved helping to write patches for bugs, packaging new releases and general project maintenance. Additionally, I have also worked on a research paper with an external academic collaborator in my free time.

I have been given an honorary appointment by the University of Aberdeen to continue the work I have done during my previous Research Fellow tenure on a part-time basis. In particular, this involves working on research papers in my spare time, reviewing research papers for conferences, and attending the NLG research group to discuss relevant papers at the University of Aberdeen.

Research Fellow, Computing Science, University of Aberdeen**July 2010 - June 2012**

Appointed as a research fellow to work on a follow-up project on research work done during my PhD. During this project I was responsible for the development, deployment, refinement, and evaluation of an NLG system to convert neonatal clinical data into reports for parents of pre-term neonates. I worked on refining the prototype system that I developed as part of my PhD. This meant I was working closely with clinical domain experts and neonatal clinical data to help refine the quality of texts generated and bring about the integration of our NLG system with the existing electronic health record software. I also developed the web-based interface for parents to access the automatically generated reports from a public computer. Additionally, I was also responsible for project managing a research assistant and given the responsibility to apply for NHS ethics approval so that the system could be evaluated on ward with parents.

SKILLS**Computer Programming Languages:** Java and Python.**Source/Project Control:** SVN, Git.**Languages:** German (basic/intermediate) and Urdu (basic).**Other:** Experience of developing under the Agile development methodology.**PUBLICATIONS**

- **Saad Mahamood** and Maciej Zembrzuski (2019). Hotel Scribe: Generating High Variation Hotel Descriptions. To appear in Proceedings of the 12th International Natural Language Generation Conference (INLG 2019). Tokyo, Japan. October 2019.
- Dimitra Gkatzia and **Saad Mahamood** (2015). A Snapshot of NLG Evaluation Practices 2005-2014. To appear at 15th European Workshop on Natural Language Generation — ENLG-15. Brighton, United Kingdom. September 2015.
- **Saad Mahamood**, William Bradshaw, and Ehud Reiter (2014). Generating Annotated Graphs using the NLG Pipeline Architecture. International Natural Language Generation 2014 — INLG 2014. Philadelphia, PA, USA, June 2014.
- **Saad Mahamood** and Ehud Reiter (2012). Working with Clinicians to Improve a Patient-Information NLG system. *Accepted paper for* International Natural Language Generation 2012 — INLG 2012. Starved Rock, IL, USA. June 2012.
- **Saad Mahamood** and Ehud Reiter (2011). Generating Affective Natural Language for Parents of Neonatal Infants. 13th European Workshop on Natural Language Generation — ENLG-11. Nancy, France. September 2011.
- Wendy Moncur, **Saad Mahamood**, Ehud Reiter, Yvonne Freer (2009). Involving healthcare consumers in knowledge acquisition for virtual healthcare. Virtual Healthcare Interaction 2009 (AAAI Fall Symposium Series).
- Albert Gatt, François Portet, Ehud Reiter, Jim Hunter, **Saad Mahamood**, Wendy Moncur, Somayajulu Sripada (2009). From Data to Text in the Neonatal Intensive Care Unit: Using NLG Technology for Decision Support and Information Management. *AI Communications* 22:153-186.
- **Saad Mahamood**, Ehud Reiter, Chris Mellish (2008). Neonatal Intensive Care Information for Parents — An Affective Approach. Proceedings of the Twenty-First IEEE International Symposium on Computer-Based Medical Systems. Jyväskylä, Finland. June 2008. Editors: Seppo Puuronen, Mykola Pechenizkiy, Alexey Tsymbal, and Dah-Jye Lee. ISSN: 1063-7125
- **Saad Mahamood**, Ehud Reiter, Chris Mellish (2007). A Comparison of Hedged and Non-hedged NLG Texts. Proceedings of the 11th European Workshop on Natural Language Generation — ENLG-07. Schloss Dagstuhl, Germany. June 2007. Editor: Stephan Busemann. ISSN: 0946-0098.