

Chapter VIII

Application of Natural Language Processing (NLP) Techniques in E-Governance

Siddhartha Ghosh

G. Narayanamma Institute of Technology & Sc., India

ABSTRACT

E-governance is the public sector's use of information and communication technologies (ICT) with the aim of improving information and service delivery, encouraging citizen participation in the decision-making process and making government more accountable, transparent, and effective. Effective and efficient e-governments deploy information and communication technology systems to deliver services through multiple channels that are accessible, fast, secure, reliable, seamless, and coherent. To implement better government-to-government (G2G), government-to-business (G2B), government-to-enterprise (G2E) and government-to-citizen (G2C) services a good governance should not only utilize ICT, it has to be also serious about implementing natural language processing (NLP) Techniques to reach up to the masses and make e-governance successful one. This chapter shows the need of applying NLP technologies in the field of e-governance and also tries to focus on the issues, which can be resolved very easily with the help of these modern technologies. It also shows the advantages of applying NLP in e-governance.

INTRODUCTION

Good governance is an act of balancing the interests that cut across community, space and time. The task is multi-dimensional and requires the

employment of tools that can articulate the process through meaningful participation of the common man. Once we talk about the common man we should also think about how they communicate and how they understand

If the major aims of e-governance are:

- To strengthen and upgrade the present infrastructure of information technology in the ministry. It may also introduce the ICT for the first time in governance if it is not there till date.
- To bring in transparency the functioning by placing the information, to the extent possible, in the public domain. Public should not just wait for a Right for Information acts. They should be available just with a mouse click.
- To interlink the functioning of different offices to bring about synergy in the aspirations and enable effective and timely decision-making. Because the offline process are time consuming and tough to monitor.
- To develop public grievances and complaint system and eliminate the need of personal visits to offices by the public. This is the area where lot of work has to be done. There are lots of issues with public, which needs to be answered. Government cannot close their eye for a long time.
- To make available forms and information on the Internet and the facility of filling the applications from remote rural areas-Web enabled application system. Here the application of natural language processing (NLP) system can just totally change the face of a government.

Then the next major point should be:

- Application of modern technologies by the e-governance (i.e. NLP techniques) to make a governance good governance, to make good governance a better one and then the best. And most important issue is to hold that position for a long time with making citizens happy.

What is Natural Language Processing (NLP)?

According to Wikipedia Natural language processing is a sub-field of **artificial intelligence** and linguistics. It studies the problems of automated generation and understanding of natural human languages. Natural language generation systems convert information from computer databases into normal-sounding human language, and natural language understanding systems convert samples of human language into more formal representations that are easier for computer programs to manipulate.

ORIGINS

The idea of using digital computers in NLP is 'old', possibly because one of the first uses of computers was in breaking military codes in the Second World War. Some computer scientists appear to have reflection that Russian (for example) is just English in a different code. In which case, since codes can be broken, so can Russian. This idea assumes there is a common 'meaning base' to all natural languages, apart from of their surface differences. The overwhelming harmony among linguists is that this is simply not true.

'Artificial Language Processing', in the form of compilers and interpreters for programming languages, was a key element in the success of digital computers from their earliest days. This success indisputably expectanted research into NLP (and also encouraged an optimistic approach).

There have been cycles of sanguinity and pessimism in the field of NLP (we are possibly in a more optimistic phase at present); although some very real advances have been made, the target of a general NLP system remains intangible. Historically, computer scientists have often been far too over-optimistic about NLP, probably for some of the reasons noted above.

9 more pages are available in the full version of this document, which may be purchased using the "Add to Cart" button on the publisher's webpage:

www.igi-global.com/chapter/application-natural-language-processing-nlp/8980

Related Content

Integrating Electronic Government and Public Administration Reform Strategies: Method and Experience

Adegboyega Ojo and Tomasz Janowski (2011). *Global Strategy and Practice of E-Governance: Examples from Around the World* (pp. 102-123).

www.irma-international.org/chapter/integrating-electronic-government-public-administration/52261

African Regional Case of E-Government

Janet Kaaya (2008). *Electronic Government: Concepts, Methodologies, Tools, and Applications* (pp. 2065-2077).

www.irma-international.org/chapter/african-regional-case-government/9843

Electronic Government Services Adoption: The Moderating Impact of Perceived Service Quality

Isaac Kofi Mensah and Jianing Mi (2017). *International Journal of Electronic Government Research* (pp. 38-54).

www.irma-international.org/article/electronic-government-services-adoption/190835

Influences of Digital Transformation on Life Expectancy and the Gender Gap in European Countries

Ha Le Thanh, Hai Nguyen Phuc, Nam Pham Xuan and Bao Ho Dinh (2022). *International Journal of Electronic Government Research* (pp. 1-28).

www.irma-international.org/article/influences-of-digital-transformation-on-life-expectancy-and-the-gender-gap-in-european-countries/298117

Debate on E-Debate: Between Acceptance and Refusal

Ewa Krzatala-Jaworska (2012). *Active Citizen Participation in E-Government: A Global Perspective* (pp. 510-527).

www.irma-international.org/chapter/debate-debate-between-acceptance-refusal/63387