Daniel Macias-Galindo

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I am interested in topics related to concept classification, from Taxonomies to Ontologies, from semi-automatic construction to data analysis, visualisation, representation and application. Also, I am interested in the software development process, system architecture, APIs and better ways to help communicating ideas. More particularly, in the quick prototyping and development of "proof-of-concepts" that can be the principle of new products. Recently I have been exploring and programming APIs and services for voice-operated devices like Alexa and Google Assistant.

Interests

Knowledge Representation and Reasoning, Computational Linguistics, Information Retrieval, Conversational Agents/Systems, Machine Learning.

Education

PhD in Computer Science (2014) - RMIT University. Melbourne, Australia

My research involved the automatic construction of *modular ontologies* representing the vocabulary of a topic (e.g. zoos, museums, food). These ontologies were incorporated in a conversational system capable of engaging in chat-like dialogue with users. I also investigated the effect of conversational domains in the human perception and automatic measures of semantic relatedness.

Master in Computer Science (2007) - Benemérita Universidad Autónoma de Puebla. Mexico

BEng in Computer Engineering (2005) - Universidad Popular Autónoma del Estado de Puebla. Mexico

Working Experience

Ontology Lead (May 2013 - Present)

Sensis Pty Ltd | Search Capability Team, Search and Knowledge Discovery

Projects

Ontologist (March 2013 - May 2014)

Sensis Pty Ltd | Search Capability Team, Search API

Projects

Search Capability program (Oct 2010 - Present) (http://developers.sensis.com.au/)

The Search Capability Program has built a heavily-tuned SOLR-based search engine currently servicing millions of requests per day, serving up highly relevant search results for Business, Government and Points of Interest for Yellow Pages, WhereIs (Mobile) and numerous external partnerships.

Working with the SAPI development team, the Search Capability team consists primarily of Data Scientists who leverage interaction data and content from across Sensis (Yellow Pages, White Pages and WhereIs) to automate the measurement and improvement of the SAPI Search algorithm and associated Ontologies for a dramatically improved User Experience and Advertiser ROI.

Sensis Ontology Program (Mar 2013 - Jun 2014)

The Sensis Ontology Program is an enabler for richer classification of Business, Government and Geospatial content and data across Sensis which aims to move classification away from manually managed print heading structures and into automated digital clusters of terms, concepts and categories.

This is designed to assist in providing fresher, more accurate and deeper content for more accurate retrieval of listings via SAPI Search, but also provides a significant boost in supporting data for business intelligence and data science teams.

Accountabilities

Problem-solving skills

- I enjoy finding solutions to new problems in my working group. From finding alternatives to approach problems differently to producing quick prototypes that can be later used for demonstrations and showcases.
- I am constantly challenged by designing and implementing tools in an Agile environment. An example of this is Sensis Ontologies, now in its second iteration, which has been constantly reviewed due to changing architecture and constrained hardware resources, while still being capable of producing solutions on time.
- I have started developing software products for personal use, following an Agile approach and sharing my code through Git platforms (e.g. Github, SourceTree, Gitorious).
- I have recently joined hackatons for good causes (Random Hacks of Kindness, GovHack), always with the idea of finding a new challenge. This has forced me to be faster at developing prototypes and deploying them online, in order to present demonstrable results.

Presentation skills

- As part of my formation as a researcher, I am capable of communicating ideas to any kind of audience, including classrooms for at least the past twelve years.
- When presenting, I tend to use visual materials as a way to engage with the audience rather than as supportive material for myself. I have tried different products, from PowerPoint and Beamer, to more visual and interactive platforms like Prezy and reveal.js
- I am continuously looking for opportunities to present to an audience, and to share my ideas with my peers.

Team member

- In the Sensis Search API team, due to its Agile formation, I constantly must communicate our progress and roadblocks that we can devise before these become issues. This includes not only the Sensis Ontology, but also other products and projects that have been under my charge (refer to **Projects** section).
- Documentation is an important part of any project, and I understand passing an idea through text sometimes does not reflect the whole picture to other team members. Therefore I tend to create thorough and informative cards, especially when these will be taken by developers. When these are taken, I join the involved team, and explain to them the business benefits that the card represents.
- I am also proactive, by following up current status of cards and by proposing solutions, in case of any roadblock affecting developers and/or testers. Given that at some point I have executed roles as both developer and tester, I am familiar with the product life cycle.
- When possible, I would rather work in a team than on my own. But I can deliver results in both scenarios.

Voluntary Work

- Webmaster of the IEEE Australia and New Zealand Student Conference (ANZSCON'2010). The site was implemented in HTML and PHP.
- Web development leader for the IEEE RMIT Student Branch during 2010. The site was developed in WordPress.
- Webmaster of the RMIT Computer Science Research Student Conference 2009. Also conducted logistic duties before and during the conference. The site was developed in both PHP and Flash.
- Volunteer in the Summerfest 2009, University of New South Wales, Sydney, NSW. December 2009. In charge of setting up projectors and rooms for presenters and session chairs.
- Volunteer in the ANU Summer School of Logic and Machine Learning, Canberra, ACT, Australia. January 2009. In charge of setting up presentation materials in rooms for lecturers.

Latest Publications

(only the last five publications are shown; refer to my website for the full list)

Effects of Domain on Measures of Semantic Relatedness. *Daniel Macias-Galindo*, *Lawrence Cavedon*, *Wilson Wong*, *John Thangarajah*. In *Journal of the American Society for Information Science and Technology*. (Journal, 2015). Volume 66, Number 10. Pages: 2116-2131. ISSN: 2330-1643.

Coherent Topic Transition in a Conversational Agent. *Daniel Macias-Galindo*, *Wilson Wong*, *John Thangarajah*, *Lawrence Cavedon*. In INTERSPEECH. (Poster, 2012). Portland, OR.

Using a lexical dictionary and a Folksonomy to automatically construct domain ontologies. *Daniel Macias-Galindo*, *Lawrence Cavedon*, *Wilson Wong*, *John Thangarajah*. In *Australasian Joint Conference on Artificial Intelligence*. (Conference proceedings, 2011). In Perth, WA.

Building Modular Knowledge Bases for Conversational Agents. *Daniel Macias-Galindo*, *Lawrence Cavedon*, *John Thangarajah*. In Knowledge and Reasoning in Practical Dialogue Systems. (Conference proceedings, 2011). Workshop during IJCAI'11, in Barcelona, Spain.

Development and Evolution of the Tiancalli Project. *Daniel Macias-Galindo*, *Darnes Vilariño Ayala*, *Fabiola López y López*. In Supply Chain: The way to flat organization. (Journal, 2008). Editors: Yanfang Huo, Fu Jia. Publisher: In-Teh. ISBN: 978-953-7619-35-0. Pages 193-214. Vienna, Austria.

Computer Skills

Programming Languages

- Python (2.7) (Advanced | Self-taught, Online courses, Used for work)
- Java (1.7) (Advanced | Learned at school, Used for research)
- C/C++ (Intermediate | Learned at school)
- PHP (5) (Intermediate | Learned at school, Self-taught, Used for research)
- LaTeX (Intermediate | Self-taught, Used for research)
- R (Intermediate | Self-taught, Used for research)
- JavaScript (Intermediate | Self-taught, Used for work)
- Bash (awk, grep, sed) (Beginner | Self-taught, Used for research, Used for work)

DB Managers

- MySQL (Advanced | Learned at school, Used for research, Used for work)
- Oracle (Intermediate | Self-taught, Used for work)
- PostgreSQL (9.5) (Intermediate | Self-taught, Used for work)
- MongoDB (Intermediate | Self-taught, Used for work)
- Solr (5.0) (Intermediate | Self-taught, Used for research, Used for work)
- ElasticSearch (2.3) (Intermediate | Self-taught, Used for work)

Operating Systems

- Microsoft Windows (XP, Vista, 7, 8, 10) (Advanced | Self-taught, Online courses)
- Linux (Xubuntu, Ubuntu, AMI for AWS) (Advanced | Self-taught, Used for research, Used for work)

Cloud Service Providers

- Amazon Web Services (EC2, RDS, IAM) (Advanced | Self-taught, Used for work)

Natural Language Understanding platforms

- API.ai (Intermediate | Self-taught, Used for work)

Closing date: Apr 23, 2017