Harish Tayyar Madabushi

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RESEARCH EXPERIENCE

| Oct 2018-Present | **Lecturer** | *Birmingham, UK* |
| | *University of Birmingham* | |

Lecturer at the University of Birmingham teaching both undergraduate and postgraduate students. Teach Introduction to Computer Science, Fundamentals of Programming and Artificial Intelligence.

- Supervise final year and masters student projects including those on reinforced learning, programming language design and forecasting.
- Research focused on Natural Language Processing through the integration of language structure and deep learning.

| Oct 2017-Sept 2018 | **Research Associate** | *Nottingham, UK* |
| | *University of Nottingham* | |

Research Associate on the Bloomberg-funded joint project between the School of Mathematics at the University of Nottingham and the Department of English Language and Applied Linguistics at Birmingham, aimed at creating "Diachronic Word Embeddings" - word embeddings that reflect the changing meaning of words over time (1800 - 2000).

- Understanding the Mathematical Models developed and providing a Computational Linguistics perspective; implementing them using Python and R on large datasets.
- Validating results by using standard datasets and methods from Computational Linguistics.
- Liaising with the Department of English Language and Applied Linguistics at Birmingham on cross-departmental goals while ensuring that both parties are up to date on the project.

| Sept 2014-Dec 2018 [Viva] | **PhD, School of Computer Science (EPSRC Funded)** | *Birmingham, UK* |
| | *University of Birmingham* | |

Title: *"On the Integration of Conceptual Hierarchies with Deep Learning for Explainable Open-Domain Question Answering."*

Summary: *This work improves Open-Domain Question Answering systems by integrating mental Concepts, which are generalisations or abstractions that allow the use of previous experience in new situations, with Deep Learning frameworks. It is broadly divided into two parts: The first consists of work on a purely rule-based system for fine-grained Question Classification, which achieved an accuracy of 97.2%, close to a 6 point improvement over the previous state of the art. The second involves its application to the task of Answer Selection using Deep Learning in which the resultant MRR and MAP scores outperform the current state of the art by between 3 and 5 points on both versions of a standard test set.*

Additional Details and Projects:

- Project on Exploring Public Health through Social Media Conversations for the Birmingham City Council which involved tracking and analysing social media conversations from Birmingham over a three-month period.
- Worked with CEO of IdeaLabz Investments, U.K. for six months exploring ways in which NLP can be used to better and faster understand Quarterly Reports and Earnings Call Transcripts.

SELECTED PUBLICATIONS

Harish Tayyar Madabushi, Mark Lee, and John Barnden "Integrating Question Classification and Deep Learning for improved Answer Selection. "*Proceedings of the 27th International Conference on Computational Linguistics, Santa Fe, USA (COLING2018).* [Achieved State of the Art Results in Answer Selection]

Harish Tayyar Madabushi, and Mark Lee "High Accuracy Rule-based Question Classification using Question Syntax and Semantics." *Proceedings of the 26th International Conference on Computational Linguistics, Osaka, Japan (COLING2016).* [Achieved State of the Art Results in Question Classification]

INDUSTRY EXPERIENCE

Mar 2014- Aug 2014	**Associate Director** *Mu Sigma Business Solutions*	*Bangalore, India*

Following the successful acquisition of Webfluenz PTE by Mu Sigma Business Solutions, the latter continued to thrive and expand as a data analytics innovator with offices based in Chicago and Bangalore, employing over 3,000 decision scientists with experience across 10 verticals.

- Leading the shift in focus of the company from a service-based approach to creating big data products which would be accessible to a broader and more varied range of customers, ensuring the smooth transition of the Webfluenz technology team into Mu Sigma.
- Managing the integration of Webfluenz technology offerings with those of Mu Sigma and identifying opportunities for the use of Webfluenz technologies in existing Mu Sigma projects.

Nov 2009- Feb 2014	**Co-Founder & Chief Technology Officer** *Webfluenz PTE*	*Bangalore, India*

Co-Founder of this product-based social media marketing company,s initially established as, a three-person operation in India 4am Design & Technology Labs. Rebranded as Webfluenz, the company expanded to nearly 50 people shifted its headquarters to Singapore and was subsequently acquired, in early 2014, by Mu Sigma Business Solutions; Webfluenz provided a wide range of services incorporating tools and solutions for companies to monitor and manage social media. Webfluenz was listed among the top fifteen tools in Goldbach Interactive's Social Media Monitoring Tool Report during 2012 and was a Red Herring 100 Asia finalist for two consecutive years in 2012 and 2013.

- Responsible for growing the engineering team to approximately twenty-five diversely skilled personnel.
- Driving the creation of proprietary Webfluenz Intelligence and Data Gathering systems by combining established computer science concepts with continuously evolving technologies.
- End responsibility for all technology matters coupled with the overall direction of the company in the capacity as Co-Founder.

Aug 2008- Sept 2009	**Co-Founder** *4am Design & Technology Labs*	*Bangalore, India*

- Capturing and understanding user needs and effectively translating requirements into workable solutions.
- Recruiting and training of the engineering team.
- Providing guidance and mentoring to the team to enable optimum performances and to drive technical capabilities.

May 2007- Apr 2008	**Team Leader** *Pinstorm Technologies*	*Bombay, India*

- Responsible for establishing the R&D division effectively creating a technology platform for online advertising; Hiring and training appropriately qualified and skilled engineers to create such a platform.

EDUCATION & ADDITIONAL SKILLS

2005-2007	**Master of Science (Grade 9.06/10.00)** *Chennai Mathematical Institute*	*Chennai, India*
2002-2005	**Bachelor of Science (Grade 92% Majors)** *Loyola College*	*Chennai, India*

Languages: Fluent English & Telugu; Spoken Tamil, Kannada & Hindi

Tech skills: Proficient in Python, Perl, C, HTML, CSS, JavaScript, MySQL, Emacs, LaTeX, Git, SVN, Linux & Amazon Web Services; Familiar with Java, C++ & R