

# Shrikant Malviya

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[github.com/skmalviya](https://github.com/skmalviya)



## EDUCATION

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### Ph.D. Information Technology — Spoken Dialogue Systems

2014-2021

Indian Institute of Information Technology, Allahabad

Prayagraj, IN

*Supervisor:* Prof. Uma Shanker Tiwary

*Dissertation:* Design and Development of Spoken Dialogue System in Indic Languages

The objective of the thesis is to incorporate a modular architecture of a spoken dialogue system to construct a digital conversational system in a native Indic language e.g. Hindi. Thus, the focus is on the task-oriented, limited domain, statistical dialogue systems that can be used for real-world applications.

### M.Tech. Information Technology — Document Summarisation

2011-2013

Indian Institute of Information Technology, Allahabad

Prayagraj, IN

*Supervisor:* Prof. Uma Shanker Tiwary

*Thesis:* Semantic Knowledge Analysis and Generation: Creative Work (Summarized Article) Generation

In the thesis, an approach of Semantic Knowledge Extraction (SKE), from a set of research papers, is proposed to develop a system named Summarized Research Article Generator (SRAG) which would generate a summarized research article based on the query given by a user.

### B.Tech. Computer Science & Engineering

2006-2010

Institute of Engineering and Technology, Ayodhya

Ayodhya, IN

## RESEARCH EXPERIENCE

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### Post Doctoral Research Associate

Dec 2022 –

Computer Science

Durham University, UK

*Project Supervisors:* Prof. Stamos Katsigiannis

Natural Language Processing for harmful online content (fake news, cyberbullying and hate speech detection). Establish the required interdisciplinary scientific methods, techniques, technology and collaborative societal approaches to provide online agency to people in a world with complex online harms.

### Research Intern

May 2017 – June 2017

8th IASNLP-2017

Advanced School on NLP, IIIT Hyderabad, IN

*Project Supervisors:* Prof. Dipti Misra Sharma, Dr. Manish Shrivastava

Participated in the tasks of creating dialogue dataset and developing a web-based conversational agent which answers queries regarding on Hyderabad tourist places, their nearest area, addresses and other details using **Python**, **Slack**, **HTML** and **JavaScript**.

### Certificate on Machine Learning

2015

Coursera

*Conducted by:* Stanford University Professor Andrew NG

Got "Online Course Statement of Accomplishment" for Course **Machine Learning** at Coursera classes.

### Certificate on CS-101 "Building A Search Engine"

2013

Udacity

*Conducted by:* Stanford University Professors Sebastian Thrun, David Evans

Got "Certificate of Accomplishment with Highest Distinction" for Course CS-101 **Building A Search Engine** at Udacity Classes.

## TEACHING EXPERIENCE

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### Assistant Professor

Oct 2021 – Present (*On Extra-Ordinary Leave*)

Siksha 'O' Anusandhan (Deemed to be University)

Bhubaneswar, IN

- Taught CSE 4131 Algorithm Design-2 which covered basic concepts of algorithm complexity, and various algorithmic design patterns like greedy algorithms, dynamic programming, backtracking. Course also cover major algorithms and data structures for searching and sorting, graphs, and some optimization techniques.
- Taught CSE 3151 Introduction to Databases which covered Relational model, SQL, Formal Query Languages, Database design and ER model, Query Processing and Optimisation, Storage and the File Structure, Indexing and Hashing, Transaction management, concurrency control.

### Guest Faculty

Dec 2020 – Aug 2021

Motilal Nehru National Institute of Technology, Allahabad

Prayagraj, IN

- Taught CS 16203 Embedded Systems which covered basics of microcontrollers and its applications. Using the Assembly programming language, it provides a comprehensive treatment of 8051 interfacing for engineering students. Designed and taught by innovate homework, group projects and in-class labs to apply and explore practical aspects of the course.

### Teaching Assistant

Aug 2014 – Dec 2020

Indian Institute of Information Technology, Allahabad

Prayagraj, IN

- Information Retrieval (IINR340E)
- Principles of Programming Language (IPPL430C)
- Basics of Prolog (IPPL430C)

### Lecturer

Jul 2013 – Aug 2014

IIIT, Rajiv Gandhi University of Knowledge Technologies

Kadapa, IN

- Analysis of Algorithms (E3S1-AOA)
- Data-Base Management System (E2S2-DBMS)

## MISCELLANEOUS EXPERIENCE

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### Core Organizing Member

IHCI-2019, IIITA

Worked as a core member of organizing committee in 11<sup>th</sup> International Conference on Intelligent Human Computer Interaction (IHCI) conducted during 12-14 December 2019.

### Core Organizing Member

IHCI-2018, IIITA

Worked as a core member of organizing committee in 10<sup>th</sup> International Conference on Intelligent Human Computer Interaction (IHCI) conducted during 07-09 December 2018.

### Chairperson, Publication Committee

2016-17, IEEE-Student Branch, IIIT-A

Incumbent of head of publication committee as a student IEEE member for one year to govern the tasks e.g. report generation, editing articles to be published in the media.

### Core Organizing Member

IHCI-2015, IIITA

Worked as a core member of organizing committee in 7<sup>th</sup> International Conference on Intelligent Human Computer Interaction (IHCI) conducted during 14-16 December 2015.

## PUBLICATIONS

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### Peer-Reviewed Journal Papers

- [J1] **Shrikant Malviya**, Rohit Mishra, Santosh Kumar Barnwal, and Uma Shankar Tiwary. "HDRS: Hindi Dialogue Restaurant Search Corpus for Dialogue State Tracking in Task-Oriented Environment". In: *IEEE/ACM Transactions on Audio, Speech, and Language Processing* 29 (2021), pp. 2517–2528. DOI: 10.1109/TASLP.2021.3065833 [↗](#).
- [J2] **Shrikant Malviya**, Piyush Kumar, Suyel Namasudra, and Uma Shanker Tiwary. "Experience Replay-Based Deep Reinforcement Learning for Dialogue Management Optimisation". In: *ACM Trans. Asian Low-Resour. Lang. Inf. Process.*, (Accepted In-Press) (2022). DOI: 10.1145/3539223 [↗](#).
- [J3] Rohit Mishra, **Shrikant Malviya**, Sumit Singh, Varsha Singh, and Uma Shanker Tiwary. "Multi-attribute decision making application using hybridly modelled Gaussian Interval Type-2 Fuzzy sets with uncertain mean". In: *Multimedia Tools and Applications* (2022), pp. 1–28. DOI: 10.1007/s11042-022-12172-z [↗](#).
- [J4] Rohit Mishra, **Shrikant Malviya**, Rudra Chandra Ghosh, and Uma Shanker Tiwary. "Soft clustering and interval type-2 fuzzy set based inference strategy for IT personnel selection". In: *Journal of Intelligent & Fuzzy Systems* 42.6 (2022), pp. 5351–5359. DOI: 10.3233/JIFS-211892 [↗](#).
- [J5] **Shrikant Malviya**, Rohit Mishra, Santosh Kumar Barnwal, and Uma Shankar Tiwary. "A Framework for Quality Assessment of Synthesized Speech using Learning-Based Objective Evaluation". In: *International Journal of Speech Technology* (2023). DOI: 10.1007/s10772-023-10021-4 [↗](#).

### Peer-Reviewed Conference Proceedings

- [C1] Dipam Goswami, **Shrikant Malviya**, Rohit Mishra, and Uma Shanker Tiwary. "Analysis of Word-level Embeddings for Indic Languages on AI4Bharat-IndicNLP Corpora". In: *IEEE 8th UPCON*. IEEE, 2021, pp. 1–4.
- [C2] Reetu Kumari, Rohit Mishra, **Shrikant Malviya**, and Uma Shanker Tiwary. "Detection of Semantically Equivalent Question Pairs". In: *International Conference on Intelligent Human Computer Interaction*. Springer, 2020, pp. 12–23.
- [C3] Rohit Mishra, Santosh Kumar Barnwal, **Shrikant Malviya**, Varsha Singh, Punit Singh, Sumit Singh, and Uma Shanker Tiwary. "Computing with Words Through Interval Type-2 Fuzzy Sets for Decision Making Environment". In: *International Conference on Intelligent Human Computer Interaction*. Springer, Cham, 2019, pp. 112–123.
- [C4] Sumit Singh, **Shrikant Malviya**, Rohit Mishra, Santosh Kumar Barnwal, and Uma Shanker Tiwary. "RNN Based Language Generation Models for a Hindi Dialogue System". In: *International Conference on Intelligent Human Computer Interaction*. Springer, Cham, 2019, pp. 124–137.
- [C5] Rohit Mishra, Santosh Kumar Barnwal, **Shrikant Malviya**, Prason Mishra, and Uma Shanker Tiwary. "Prosodic feature selection of personality traits for job interview performance". In: *International Conference on Intelligent Systems Design and Applications*. Springer, Cham, 2018, pp. 673–682.
- [C6] Swapnil Jain, **Shrikant Malviya**, Rohit Mishra, and Uma Shanker Tiwary. "Sentiment analysis: An empirical comparative study of various machine learning approaches". In: *Proceedings of the 14th International Conference on Natural Language Processing (ICON-2017)*. 2017, pp. 112–121.
- [C7] Omkar Dhariya, **Shrikant Malviya**, and Uma Shanker Tiwary. "A hybrid approach for Hindi-English machine translation". In: *2017 International Conference on Information Networking (ICOIN)*. IEEE, 2017, pp. 389–394.
- [C8] **Shrikant Malviya**, Vivek Kr Singh, and Jigyasa Umrao. "Discriminating Confident and Non-confident Speaker Based on Acoustic Speech Features". In: *Advanced Computing and Communication Technologies*. Springer, Singapore, 2016, pp. 179–186.

[C9] **Shrikant Malviya**, Rohit Mishra, and Uma Shanker Tiwary. "Structural analysis of Hindi phonetics and a method for extraction of phonetically rich sentences from a very large Hindi text corpus". In: *2016 Conference of The Oriental Chapter of International Committee for Coordination and Standardization of Speech Databases and Assessment Techniques (O-COCOSDA)*. IEEE. 2016, pp. 188–193.

[C10] **Shrikant Malviya** and Uma Shanker Tiwary. "Knowledge based summarization and document generation using bayesian network". In: *Procedia Comput. Sci* 89 (2016), pp. 333–340.



## PROFESSIONAL MEMBERSHIPS

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- IEEE
  - IEEE Signal Processing Society
  - IEEE Young Professionals
- Python Software Foundation (Basic Member) [↗](#)

## TECHNICAL STRENGTHS & QUALIFICATIONS

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<b>Programming Languages</b>	Python, Bash, C/C++, HTML, CSS, JavaScript, $\LaTeX$
<b>SCM tools</b>	Git
<b>Operating Systems</b>	 Linux,  Windows
<b>Databases</b>	MySQL, SQLite

## AWARDS & WELL-DONE

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- IASNLP-2017 Team-Shared Task, Ranked 3<sup>rd</sup>.
- Student member in departmental postgraduate committee (DPGC) during Ph.D.
- Received MHRD scholarship during PhD (2014-2019).
- Received MHRD scholarship during M.Tech (2011-2013).

## DEVELOPED SYSTEMS/APPLICATIONS

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- SILP Assistant (SILPA) Conversational Agent (ongoing)
  - A Hindi language Task-oriented spoken dialogue system [↗](#)
- Word embeddings on AI4Bharat IndicNLP corpora (Jan 2022)
  - Developed Word level embeddings for 10 Indian languages on AI4Bharat IndicNLP corpora. [↗](#)
- Hindi Dialogue Corpus & DST modules for SILPA (May 2021)
  - It consists of a fully-labelled human-human conversations and a set of benchmark DST modules. [↗](#)
- NLG module for SILPA (April 2020)
  - A RNNLG Based NLG module for a Hindi spoken dialogue system [↗](#)

## LANGUAGES

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- Hindi (Native)
- English (Fluent)

## REFERENCES

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- Prof. Uma Shanker Tiwary (IIT-A) [ust@iiita.ac.in](mailto:ust@iiita.ac.in) [↗](#)
- Dr. Stamos Katsigiannis (Durham University) [stamos.katsigiannis@durham.ac.uk](mailto:stamos.katsigiannis@durham.ac.uk) [↗](#)
- Dr. Tanveer J. Siddiqui (University of Allahabad) [siddiqui.tanveer@gmail.com](mailto:siddiqui.tanveer@gmail.com) [↗](#)

## INTERESTS

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- Flute Playing
- Table-Tennis
- Cooking
- Yoga
- Reading spiritual books