

Manoj Kumar Chinnakotla

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Summary

Researcher with deep experience in Information Retrieval, Web Mining, Natural Language Processing, Machine Learning and Deep Learning with a strong publication record in relevant premiere conferences and journals. Also have academic experience with more than 2 years of experience in teaching and guiding research students. 7+ years of industry experience in applying research for building and developing industry products and features.

Experience

Aug 2015 – Current	Senior Applied Scientist Artificial Intelligence (AI) and Research, Microsoft, Hyderabad, India
March 2015 – Current	Adjunct Faculty, Language Technology Research Center (LTRC), IIIT Hyderabad, Hyderabad, India
Feb 2012 – Aug 2015	Applied Scientist Artificial Intelligence (AI) and Research, Microsoft, Hyderabad, India
2002 – 2004	Senior Member of Technical Staff, Persistent Systems Pvt. Ltd., Pune, India

Education

Doctor of Philosophy (Ph.D),

[Department of Computer Science and Engineering,](#)

[Indian Institute of Technology \(IIT\), Bombay -- Mumbai, India](#)

Thesis: Information Retrieval in Multilingual Resource-Constrained Settings

Advisors: [Prof. Pushpak Bhattacharyya](#) and [Prof. Om P. Damani](#)

Graduation: 2011

Master of Technology (M.Tech),

[Department of Computer Science and Engineering,](#)

[Indian Institute of Technology \(IIT\), Bombay -- Mumbai, India](#)

Graduation: 2002

Bachelor of Technology (B.Tech),

Department of Computer Science and Engineering,

S.V. University College of Engineering, Tirupati, India

Graduation: 2000

Research Interests

- Information Retrieval (IR)
 - Natural Language Processing (NLP)
 - Deep Learning
 - Machine Learning
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Research Publications

- Harish Yenala, Ashish Jhanwar, Manoj Chinnakotla, Jay Goyal, “*Deep Learning for Detecting Inappropriate Content in Text*”, International Journal of Data Science and Analytics (**JDSA**), 2017 (Under Review).
- Khyathi Chandu, Manoj Chinnakotla, Alan Black, Manish Shrivastava, “*WebShodh: A Code Mixed Factoid Question Answering System for Web*”, In the Proceedings of 8th International Conference of the CLEF Association (**CLEF 2017**), Dublin, Ireland (System Demo URL: <http://bit.ly/2tp4lem>)
- Harish Yenala, Manoj K. Chinnakotla, Jay Goyal, “*Convolutional Bi-Directional LSTM for Detecting Offensive Query Suggestions in Web Search*”, In the Proceedings of 21st Pacific-Asia Conference on Knowledge Discovery and Data Mining (**PAKDD 2017**), Jeju Island, South Korea (**Winner of the Best Paper Award**).
- Nausheen Fatma, Manoj K. Chinnakotla, Manish Shrivastava, “*The Unusual Suspects: Deep Learning Based Mining of Interesting Entity Trivia from Knowledge Graphs*”, In the Proceedings of 31st AAAI conference on Artificial Intelligence (**AAAI 2017**), San Francisco, USA.
- Sai Praneeth, Naga Goutham, Manoj K. Chinnakotla, Manish Shrivastava, “*Hand in Glove: Deep Feature Fusion Network Architectures for Answer Quality Prediction in Community Question Answering*”, In the Proceedings of 26th International Conference on Computational Linguistics (**COLING 2016**), Osaka, Japan.
- Sai Praneeth, Naga Goutham, Manoj K. Chinnakotla, Manish Shrivastava, “*Deep Feature Fusion Networks for Answer Quality Prediction in Community Question Answering*”, In Neu-IR Workshop on Neural Information Retrieval (**SIGIR 2016**), Pisa, Italy.
- Arpita Das, Manoj K. Chinnakotla, Manish Shrivastava, “*Together We Stand: Siamese Networks for Similar Question Retrieval*”, In the Proceedings of 54th Annual Meeting of the Association for Computational Linguistics (**ACL 2016**), Berlin, Germany.
- Arpita Das, Manish Shrivastava, Manoj K. Chinnakotla, “*Mirror on the Wall: Finding Similar Questions using Deep Semantic Topic Modeling*”, In the Proceedings of 20th Pacific Asia Conference on Knowledge Discovery and Data Mining (**PAKDD 2016**), Auckland, NZ.
- Abhay Prakash, Manoj K. Chinnakotla, Dhaval Patel, Puneet Garg, “*Did you Know?: Mining Interesting Trivia for Entities from Wikipedia*”, In the Proceedings of 24th International Joint Conference on Artificial Intelligence (**IJCAI 2015**), Buenos Aires, Argentina.
- Khyathi C. Raghavi, Manoj K. Chinnakotla, Manish Shrivastava, “*Answer ka type kya hai?: Learning to Classify Questions in Code-Mixed Language*”, In the Proceedings of 24th International World Wide Web Conference (**WWW 2015**), Florence, Italy.
- Harish Yenala, Avinash Kamineni, Manish Shrivastava, Manoj Kumar Chinnakotla, “*IIIT-H at BioASQ Challenge 2015 Task 3B: Bio-Medical Question Answering System*”, **CLEF 2015**.
- Avinash Kamineni, Nausheen Fatma, Arpita Das, Manish Shrivastava, Manoj Kumar Chinnakotla, “*IIIT-H at BioASQ Challenge 2015 Task 3A: Extreme Classification of PubMed Articles using MeSH Labels*”, **CLEF 2015**.

- Manoj K. Chinnakotla, Rupesh K. Mehta and Vipul Agrawal, “Unsupervised Detection and Promotion of Authoritative Domains for Medical Queries in Web Search”, In the Proceedings of 11th International Conference on Natural Language Processing (**ICON 2014**), Goa, India.
- Manoj K. Chinnakotla, Om P. Damani and Avijit Satoskar, “*Transliteration for Resource-Scarce Languages*”, ACM Transactions on Asian Language Information Processing (**ACM TALIP**), Volume 9, Issue 4, December 2010.
- Manoj K. Chinnakotla, Karthik Raman, Pushpak Bhattacharyya, “*Multilingual Pseudo-Relevance Feedback: Performance Study of Assisting Languages*”, In the Proceedings of 48th Annual Meeting of the Association for Computational Linguistics (**ACL 2010**), Uppsala, Sweden.
- Manoj K. Chinnakotla, Karthik Raman, Pushpak Bhattacharyya, “*Multilingual PRF: English Lends a Helping Hand*”, In the Proceedings of 33rd Annual ACM SIGIR Conference (**SIGIR 2010**), Geneva, Switzerland.
- Vishal Vacchani, Manoj K. Chinnakotla, Mitesh Khapra and Pushpak Bhattacharyya, “*More Languages, More MAP?: A Study of Multiple Assisting Languages in Multilingual PRF*”, In the Proceedings of 4th Workshop on CLIA, Computational Linguistics Conference (**COLING 2010**), Beijing, China.
- Manoj K. Chinnakotla, Vishal Vacchani, Shalini Gupta, Karthik Raman, Pushpak Bhattacharyya, “*IITB CFILT @ FIRE 2010: Discriminative Approach to IR*”, **FIRE 2010**, Gandhinagar, India.
- Manoj K. Chinnakotla and Om P. Damani, “*Character Sequence Modeling for Transliteration*”, In the Proceedings of 7th International Conference on Natural Language Processing (**ICON 2009**), Hyderabad, India.
- Manoj K. Chinnakotla and Pushpak Bhattacharyya, “*Language Modeling Based Local Set Re-Ranking using Manual Relevance Feedback*”, In the Proceedings of 7th International Conference on Natural Language Processing (**ICON 2009**), Hyderabad, India.
- Manoj K. Chinnakotla and Om P. Damani, “*Experiences with English-Hindi, English-Tamil and English-Kannada Transliteration Tasks at NEWS 2009*”, In the Proceedings of ACL-IJCNLP Named Entities Workshop (**NEWS 2009**), Singapore, 2009.
- Nilesh Padariya, Manoj K. Chinnakotla, Ajay Nagesh and Om P. Damani, “*Evaluation of Hindi-English, Marathi-English and English-Hindi CLIR at FIRE 2008*”, Working Notes of Forum for Information Retrieval Evaluation (**FIRE 2008**), Kolkata, India.
- Manoj K. Chinnakotla, Sagar Ranadive, Om P. Damani and Pushpak Bhattacharyya, “*Hindi to English and Marathi to English Cross Language Information Retrieval Evaluation*”, Advances in Multilingual and Multimodal Information Retrieval (**CLEF 2007**), Volume 5152, Springer, LNCS, 2008.
- Manoj K. Chinnakotla and Sunita Sarawagi, “*Graphical Models for Multi-labeled Text Classification*”, KReSIT Technical Report, IITB/KReSIT/2006/November/34.

Major Projects

Name: Detecting Offensive Language in Queries and Conversations

Description: Proposed and implemented a novel deep learning based technique for automatically identifying offensive language in queries and conversations. The novel architecture, “Convolutional Bi-Directional LSTM (C-BiLSTM)”, combines the strengths of both Convolution Neural Networks (CNN) and Bi-directional LSTM (BLSTM) deep learning architectures. Given a query, C-BiLSTM uses a convolutional layer for extracting feature representations for each query word which is then fed as input to the BLSTM layer which captures the various sequential patterns in the entire query and outputs a richer representation encoding them. The query representation

thus learnt passes through a deep fully connected network which predicts the target class. C-BiLSTM doesn't rely on hand-crafted features, is trained end-end as a single model, and effectively captures both local features as well as their global semantics.

Tools: Keras

Name: Conversational Agent for Movie Domain in India Market

Description: Worked on implementing a prototype of a chat-bot in movies domain for Indian market. The bot supported various features such as question answering, recommendations and free-form conversations related to movies.

Tools: Keras, Skype Bot Framework

Name: Ranking Techniques for Improving India Relevance

Description: Worked on micro-segment based ranking techniques (Youtube Video Intent, Indic language term variants) for improving the relevance in Indian market. The Youtube Video intent micro-segment has shown significant offline SBS of +17pts and is currently being considered for shipping.

Tools: CAL, QAS, L2 Ranker, L3 Ranker Workflows, Cosmos, Aether

Name: Mining Interesting Trivia for Entities from Wikipedia

Description: A trivia is any fact about an entity which is interesting due to its uniqueness, unusualness, unexpectedness or weirdness. I implemented a pipeline to mine such interesting trivia for entities from their Wikipedia pages. These interesting facts would be shown on Bing SERP whenever a user searches for the corresponding entity. The objective of presenting the trivia is to improve user engagement on SERP.

Tools: Stanford NLP Library, MSRSPLAT, TLC, Cosmos, Aether

Name: Natural Language Based Memorization and Recall in Cortana

Description: We implemented a new scenario in Cortana for Natural Language based memorization and recall of various facts in daily life. This involved implementing a basic NL based question answering system which extracts the key, value pairs to be memorized from the user utterance and performs storage and retrieval.

Tools: Stanford NLP Library, MSRSPLAT, TLC, Cosmos, Aether

Name: Entity URL Discovery Pipeline

Description: Developed the URL Discovery pipeline to associate URLs to entities. This improved the entity coverage and clicked URL percentage for Bing Entity Task Pane for Music.Track and Music.Album segments. In Music.Track, the average entity coverage increase was 19% and the average click percentage increase was 12%. The number of Single Dominant Intent (SDI) queries increased by 199% over prod baseline. The SDI query impression increased by 217% over prod baseline.

Tools: TLC, Scope, Cosmos, Aether

Name: Improving the Authority of Bing Search Results

Description: The objective of this project was to improve the authoritativeness of Bing search results. I defined the notion of authority of a search result, modeled the problem and came up with a technique to automatically identify and rank the authoritative domains for a given query segment. We shipped this technique for medical domain.

Tools: Scope, Aether, L3 Workflow, L2 Ranker

Tutorials, Invited Talks and Blog/News Articles

Tutorials

- Manoj K. Chinnakotla and Parth Gupta, "Deep Learning for Information Retrieval", FIRE 2016, Kolkata, India.
- Manoj K. Chinnakotla, "Question Answering Systems", IIIT-H Advanced Summer School on NLP (IASNLP 2015), Hyderabad, India
- Manoj K. Chinnakotla, Manish Shrivastava and Radhika Mamidi, "Question Answering Techniques for Structured, Semi-Structured and Unstructured Information Sources" (Full Day), ICON 2014, Goa, India.

Invited Talks/Workshops

- Invited Talk on “Recent Trends in Deep Learning at Microsoft” at [Workshop on Data Science and Machine Learning \(DSML 2017\)](#), ISI Kolkata, India
- Guest Lecture on “Research Trends in Question Answering” and “An Overview of Conversational Agents” in “[Advanced Topics in AI](#)” course by Prof. Mausam, IIT Delhi, India.
- Invited Talk on “A Peek into Recent Advances in Deep Learning at Microsoft” at [IIIT-H Summer School on Deep Learning for Computer Vision](#), 2016.
- Invited Talk on “*Did you know?: Mining Interesting Trivia for Entities from Wikipedia*”, *Machine Learning, Analytics and Data Science Conference (MLADS) 2015*, Redmond, USA, Dec, 2015
- Organized a workshop on “*Machine Learning for Information Retrieval*”, IIT Kanpur, India, April, 2015
- Organized a workshop on “*Predictive Modeling using Machine Learning*”, IIT Roorkee, India, October, 2015
- Invited Talk on “*Machine Learning for Query-Document Matching in Web Search*”, *ACM Hyderabad Chapter*, Hyderabad, India, May 2012.
- Invited Talk on “*Multilingual Pseudo-Relevance Feedback*”, *Xerox Research Centre*, Bangalore, India, Jan 2012
- Invited Talk on “*Multilingual Information Access*”, *IBM Research*, Bangalore, India, Sep 2011

Blogs/News Articles

- Mitigating Offensive Search Suggestions with Deep Learning -- <https://blogs.msdn.microsoft.com/msidc/2017/05/29/mitigating-offensive-search-suggestions-with-deep-learning/>
- How Deep Learning is Teaching Machines to Detect Inappropriate Responses like a Boss - <http://www.indiatimes.com/technology/apps/how-deep-learning-is-teaching-machines-to-detect-filter-inappropriate-responses-like-a-boss-323402.html>

Notable Achievements

- Recipient of Best Paper Award in PAKDD 2017
- Recipient of Infosys Research Fellowship Award for the duration of March 2007- March 2010.
- Recipient of Student Travel Award and Donald B. Crouch Travel Grant at SIGIR 2010.
- Secured the first place for any Indian Language to English Cross Lingual Information Retrieval (CLIR) and fifth place for any language to English CLIR at CLEF 2007 forum.
- Secured the second place in the NEWS (Named Entities Workshop) 2009 Shared Task on Transliteration held in conjunction with ACL-IJCNLP 2009.
- Secured a position in the top 0.2% (Rank: 163) amongst 50,000 candidates in the state-level Engineering Entrance Examination
- Ranked 7th state-wide in the Junior Intermediate Examinations conducted by Board of Intermediate Education, Andhra Pradesh
- Recipient of “*National Merit Scholarship*” for meritorious academic performance in Intermediate Board Examination
- Recipient of “*Telugu Vijnana Parithoshikam*” (a state government sponsored scholarship) for meritorious academic performance in SSC Board Examinations.

Professional Services/Activities

- Adjunct Faculty at IIIT Hyderabad (2015-Current)
 - Courses Offered: Advanced Topics in Web Search and Mining, NLP Applications

- Guided more than 6 M.S Thesis Students so far - From IIIT-H, IIT-Roorkee.
 - Program Committee Member for
 - IJCAI 2016, MIKE 2015, FIRE 2014, ICON 2014
 - Reviewer for
 - ACM Transactions for Asian Language Information Processing (ACM TALIP)
 - IJCAI 2016
 - International Conference on Natural Language Processing (ICON)
 - MIKE 2015, MIKE 2014
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References

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