Ayan Das

C/O Swapan Kumar Das, Ichapur, Sasthibagan
P.O. Santragachi, Howrah
West Bengal, India, PIN:711104
(+91)-9831403301
ayandas84@gmail.com
http://cse.iitkgp.ac.in/ ayand/

Education

Jul'2013- **Doctor of Philosophy (PhD)**, *Computer Science and Engineering*,
Indian Institute of Technology Kharagpur.

Thesis: ***Improving cross-lingual transfer parsing by transformation and chunking***

Supervisors: ***Prof. Sudeshna Sarkar***

Synopsis: March 2020 (tentative)

Thesis Submission: March 2020 (tentative)

2011-2013 **Master of Technology (M.Tech)**, *Computer Science and Engineering*,
Indian Institute of Technology Kharagpur.

CGPA: **8.60**

Thesis: *Word Sense Disambiguation in Bengali language*

Supervisor: Prof. Sudeshna Sarkar

2005-2009 **Bachelor of Technology (B.Tech)**, *Computer Science and Engineering*,
National Institute of Technology Durgapur.

CGPA: **8.29**

Thesis: *Testing and Verification of ISCAS-85 benchmark circuits in C*

Supervisor: Prof. Suchismita Roy

2003 **Indian School Certificate Examination (Class XII Board Exam)**.

Marks: **82.25%**

Board: Council for Indian School Certificate Examination, New Delhi

2003 **Indian Council for Secondary Education Examination (Class X Board Exam)**.

Marks: **85.00%**

Board: Council for Indian School Certificate Examination, New Delhi

Research Internship

May 2006 - July 2006 **Computer Vision and Pattern Recognition Lab**,
Indian Statistical Institute, Kolkata.

Topic: Opinion Mining

Faculty: Prof. Mandar Mitra

Professional Experience

Jul'2008 - Jul'2011 **Tata Consultancy Services, Kolkata**

Designation: Systems Engineer

Project: Corus Steel ADM

Technologies: IBM Mainframe, VAX VMS, COBOL, DB2, Natural

Technical Skills

Language:

- Programming/Scripting: C, Python, Shell Scripting, Java

Tools/Simulators:

- Analysis Tools: MATLAB/Simulink (MathWorks)
- Deep Learning Tools: Tensorflow, PyTorch, Theano
- NLP Tools: NLTK

Tools developed:

- An attention-based machine translation model using the Theano library.
- A joint neural PoS tagger, morphological analyzer and lemmatizer using *Tensorflow* library. The performance of attention-based lemmatizer gives is state-of-the-art performance on Bengali language.

Research Interests

Broad areas:

- Natural Language Processing, Machine Learning

Specific areas:

- *Natural language processing:* NLP of low-resource languages, Cross-lingual NLP, NLP of Indian languages, Dependency parsing
- *Machine Learning:* Distributed machine learning, Deep learning, Application of Deep learning architectures

Publications

Related to PhD:

Journals:

1. **Ayan Das** and Sudeshna Sarkar; *"Transform, Combine, and Transfer: Delexicalized Transfer Parser for Low-resource Languages"*; in **ACM Transactions on Asian and Low-Resource Language Information Processing (TALLIP)**, Vol. 19 Issue 1, No. 4, pp. 173-190, August 2019 (Issue-in-Progress).
2. **Ayan Das** and Sudeshna Sarkar; *"A survey of the model transfer approaches to cross-lingual dependency parsing"*; communicated to **ACM Transactions on Asian and Low-Resource Language Information Processing (TALLIP)**.

Conferences:

1. **Ayan Das** and Sudeshna Sarkar; *"A little perturbation makes a difference: Treebank augmentation by perturbation improves transfer parsing"*; *accepted for publication at* **16th International Conference on Natural Language Processing (ICON)**, Hyderabad, India, December 18–21, 2019.
2. **Ayan Das** and and Sudeshna Sarkar; *"MorphBen: A neural morphological analyzer for Bengali language"*; in the proceedings of **20th International Conference on Computational Linguistics and Intelligent Text Processing (CiCLing)**, La Rochelle, France, April 7–13, 2019.

3. **Ayan Das**, Affan Zaffar, and Sudeshna Sarkar; *"Delexicalized transfer parsing for low-resource languages using transformed and combined treebanks"*; in the proceedings of **CoNLL 2017 Shared Task: Multilingual Parsing from Raw Text to Universal Dependencies**, pp. 182–190, Vancouver, Canada, August 3–4, 2017.
4. **Ayan Das**, Raghuveer Chanda, Smriti Agrawal and Sourangshu Bhatacharya; *"Distributed Weighted Parameter Averaging for SVM Training on Big Data"*; in the proceedings of **Workshop on Distributed Machine Learning at 31st AAAI Conference on Artificial Intelligence (AAAI)**, pp. 472–477, San Francisco, CA USA, February 4–5, 2017.
5. **Ayan Das**, Agnivo Saha and Sudeshna Sarkar; *"Cross-lingual transfer parsing from Hindi to Bengali using delexicalization and chunking"*; in the proceedings of **13th International Conference on Natural Language Processing (ICON)**, pp. 99–108, Varanasi, India, December 17–18, 2016.
6. **Ayan Das**, Pranay Yerra, Ken Kumar, Agnivo Saha and Sudeshna Sarkar; *"A study of attention-based Neural Machine Translation models on Indian Languages"*; in the proceedings of **6th Workshop on South and Southeast Asian Natural language (WSSANLP)**, pp. 163–172, Osaka, Japan, December 11–12, 2016.
7. **Ayan Das**, Agnivo Saha and Sudeshna Sarkar; *"Development of a Bengali parser by cross-lingual transfer from Hindi"*; in the proceedings of **6th Workshop on South and Southeast Asian Natural language (WSSANLP)**, pp. 33–43, Osaka, Japan, December 11–12, 2016.

Related to M.Tech:

Conferences:

1. **Ayan Das**, Sudeshna Sarkar; *"Word Sense Disambiguation in Bengali applied to Bengali-Hindi Machine Translation"* in the proceedings of **10th International Conference on Natural Language Processing (ICON)**, Noida, India, 18-20 December, 2013.

Teaching Assistantship @ Dept of CSE, IIT Kharagpur

1. Programming & Data Structures Laboratory, Operating Systems Laboratory, Machine Learning, Information Retrieval, Data Analytics, Foundations of Algorithm Design and Machine Learning, Artificial Intelligence, Deep Learning, Speech and NLP
2. Introduction To Machine Learning (NPTEL Online Certificate Course)

Activities

Awards

- Received "*Institute Travel Grant*" from IIT Kharagpur for attending COLING 2016 in Osaka, Japan.
- MHRD Scholarship from IIT Kharagpur for Doctoral Studies.
- Scored 774 (Rank 369) in GATE 2011.

References

- **Prof. Sudeshna Sarkar**, Dept. of CSE, IIT Kharagpur,
  Email: *sudeshna@cse.iitkgp.ernet.in*
- **Prof. Pabitra Mitra**, Dept. of CSE, IIT Kharagpur,
  Email: *pabitra@cse.iitkgp.ac.in*
- **Prof. Arobinda Gupta**, Dept. of CSE, IIT Kharagpur,
  Email: *agupta@cse.iitkgp.ac.in*

Declaration

I hereby declare that the above information is correct to the best of my knowledge