



Pinaki Bhaskar

Dept. of Computer Science & Engineering, Jadavpur University,
188, Raja S. C. Mallick Road, P.O. Jadavpur, Kolkata, India 700032
Mobile: +91-9474790458, Ph. & Fax: +91-33-24146648, Skype: pinaki.bhaskar
E-mail: pinaki.bhaskar@gmail.com, pbhaskar@research.jdvu.ac.in
Website: www.sivajibandyopadhyay.com/Pinaki_Bhaskar
Male, Married, Indian, DOB: 2nd September 1982

Education

Doctor of Philosophy (Ph.D.) in Engineering

2014

Dept. of Computer Science & Engineering, Jadavpur University, Kolkata, India

~ Thesis title: "**Answering Questions from Multiple Documents – the Role of Multi-document Summarization**"

~ Supervisor: Prof. (Dr.) Sivaji Bandyopadhyay, CSE Dept., Jadavpur University

~ Synopsis:

Multi-document Summarization: A Multi-document Summarization system using the graph based clustering, keyphrases extraction, sentence compression and fusion technique.

Automatic Evaluation of Summary: An automatic evaluation method using Textual Entailment (TE) that works with original text and the generated summary as hypothesis.

Role of Summarization in QA systems: A multi-document summary of a set of documents on the same topic is generated as an offline process. If the question matches with any topic of the pre-generated summaries, then the answer will be generated from the summary. Otherwise the multi-documents summarization will be used at the end of a QA system. In this case the summary will be generated from the selected probable answers. It will be a multi-answer summarization.

Certificate Course in Introduction to Linguistics

2011

Scholl of Linguistics, Jadavpur University, Kolkata, India

~ Percentage: 83.40%

Master of Technology (M. Tech.) in Computer Technology

2010

Dept. of Computer Science & Engineering, Jadavpur University, Kolkata, India

~ Thesis title: "**A Query Focused Language Independent Multi Document Summarizer and Ad-hoc Monolingual Information Retrieval for English and Bengali**"

~ Supervisor: Prof. (Dr.) Sivaji Bandyopadhyay, CSE Dept., Jadavpur University

~ Percentage: 72.18%

Bachelor of Technology (B. Tech.) in Computer Science & Engineering

2006

Dept. of Computer Science & Engineering, Govt. College of Engineering & Textile Technology, Berhampore, West Bengal University of Technology (WBUT), India

~ Project: "Online Job Portal" on J2EE, SQL, Oracle, MVC Architecture

~ DGPA: 7.4 / 10.0



Research Interest

My research areas of interest are related with human language, mind and artificial intelligence. Technically the research area known as Natural Language Processing (NLP) could be described as a crossroad of Formal Linguistics, Machine Intelligence and Human-Machine Interaction. I have been actively working in Language Technologies since last 6-7 years. Presently I am focused on Question Answering, though my interests include many aspects of NLP as listed below:

- **Question Answering (QA):**
 - Factoid QA,
 - Multiple Choice Question (MCQ) Answering,
 - Comparative and Evaluative QA,
 - Procedural QA,
 - Causal QA etc.
- **Text Summarization:**
 - Single Document Summarization,
 - Multi Document Summarization,
 - Snippet Generation,
 - Sentence Compression,
 - Sentence Fusion etc.
- **Information Retrieval**
 - Cross Lingual Information Access (CLIA),
 - Ad-hoc Retrieval etc.
- **Tweet Contextualization**
- **Plagiarism Detection**
- **Dependency Parsing**

Research Experiences

Senior Research Engineer

August 2012 – April 2014

Dept. of Computer Science & Engineering, Jadavpur University, Kolkata, India

- Research Project: Development of **Cross Lingual Information Access (CLIA) System**, Phase II
- Funded by Department of Electronics and Information Technology (DeitY), Ministry of Communications & Information Technology (MCIT), Govt. of India
- Website: <http://tdil-dc.in/sandhan/>
- Consortium Partners: IIT, Bombay; IIT, Kharagpur; IIIT, Hyderabad, ISI, Kolkata; Jadavpur University; AU-KBC; AU-CEG; Guwahati University; DAIICT; IIIT, Bhubaneswar; CDAC, Noida and CDAC, Pune.
- Platform: Lucene, Nutch, Solr (open source Search Engine), JSP, JAVA
- Responsibilities:
 - Improved Snippet Generation and Summary Generation modules for CLIA.
 - Developing Question Answering system and Web page Summarization feature for CLIA.
 - Created several corpuses in Bengali like Lexicon, Parallel list, Dictionary etc.
 - Senior key member of the project CLIA under Govt. of India.
 - Professional activities including managerial task, documentation, presentation, attending meetings etc.



Research Experiences

Junior Research Fellow

September 2010 – July 2012

Dept. of Computer Science & Engineering, Jadavpur University, Kolkata, India

- Research Project Title: An Advanced Platform for Question Answering (QA) System
- Sanctioned by Indo - French Centre for the Promotion of Advanced Research (IFCPAR)
- Principal Collaborator (Indian): Prof. Sivaji Bandyopadhyay, Computer Science and Engineering Department, Jadavpur University, Kolkata, India.
- Principal Collaborator (French): Dr. Patrick Saint-Dizier, Director of Research, National Centre for Scientific Research (CNRS), Computer Science Research Institute of Toulouse (IRIT), Toulouse, France
- Visited IRIT, Toulouse, France for 2 months in 2011.
- Single handedly completed this international research project on QA.

Junior Research Engineer

February 2007 – August 2010

Dept. of Computer Science & Engineering, Jadavpur University, Kolkata, India

- Research Project: Development of Cross Lingual Information Access (CLIA) System
- Funded by Department of Information Technology (DIT), Ministry of Communications & Information Technology (MCIT), Government of India
- Consortium Partners: IIT, Bombay; IIT, Kharagpur; IIIT, Hyderabad, ISI, Kolkata; Jadavpur University; AU-KBC; AU-CEG; Utkal University; CDAC, Noida & Pune.
- Platform: Nutch (open source Search Engine), JSP, JAVA
- Developed Snippet Generation and Summary Generation modules for CLIA.
- Designed Output Screen of CLIA system.
- Created several corpuses in Bengali like Lexicon, Parallel list, Dictionary etc.

Teaching Experience

Guest Faculty

July 2011 – April 2014

Dept. of Computer Science & Engineering, Jadavpur University, Kolkata, India

- Course: B.E. and M.Tech.
- Subject: Numerical Analysis and Programming Language, Operating System Lab, Principle of Programming Language Lab.
- Assist in the thesis of master degree students of Prof. Sivaji Bandyopadhyay.
- Assist in the final year projects and assignments of graduate students of Prof. Sivaji Bandyopadhyay.

Industrial Training

1. J2EE (Servlet, JSP, Java Beans, EJB)

July – June 2005

Ardent Collaborations, Kolkata – 64, India

~ Project: e-Banking on J2EE, SQL, Oracle, MVC Architecture

2. Telecom Communication

July 2004

Bharat Sanchar Nigam Limited (BSNL)

3. Visual Basic 6.0 (VB 6) & Oracle 8

June - July 2004

Ardent Collaborations, Kolkata – 64, India

~ Project: Banking Database System on Visual Basic 6.0, Oracle 8



Achievement

- ❖ **Nominated** for the award of **best paper** in the student session of the 24th Pacific Asia Conference on Language, Information and Computation (**PACLIC 24**) on 4th – 7th Nov. 2010 at Tohoku University, Sendai, Japan.
- ❖ **Ranked top** in the shared task of **QA4MRE**: Question Answering for Machine Reading Evaluation in both **CLEF 2011, 2012** and **2013** with 0.57, 0.65 and 0.59 evaluation score of c@1 measure respectively.
- ❖ **Ranked top** in the shared task of Answer Extraction in **ResPubliQA 2010** in MLQA 2010 Workshop of **CLEF 2010** with 0.63 evaluation score.
- ❖ Received **Travel Support** from **Microsoft Research India** for attending and presenting my papers in CLEF 2013 at Valencia, Spain.
- ❖ Twice received **Student Registration Fee Waiver** from the **ELIAS**, which is an **ESF Research Network Programme**, to participate in CLEF 2011 at Amsterdam and CLEF 2013 at Valencia, Spain.

PC Member

1. **MIKE 2013** : International Conference on Mining Intelligence and Knowledge Exploration, December 18-20, 2013, VHNSN College, Virudhunagar, India
2. Initiative for the Evaluation of XML Retrieval (**INEX 2011**, Hofgut Imsbach, Germany)

Reviewer

1. **ICON-2013**: 10th International Conference on Natural Language Processing, December 18-20, 2013, CDAC Noida, India
2. **MIKE 2013** : International Conference on Mining Intelligence and Knowledge Exploration, December 18-20, 2013, VHNSN College, Virudhunagar, India
3. 24th International Conference on Computational Linguistics (**Coling 2012**), 08 - 15 Dec. 2012, IIT Bombay, Mumbai, India.
4. 8th International Conference on Natural Language Processing and Knowledge Engineering (**NLP-KE'12**), Sep. 20 – 24, 2012, Hefei (HuangShan), China.
5. Initiative for the Evaluation of XML Retrieval (**INEX**) 2011, Hofgut Imsbach, Germany
6. The 13th International Conference on Intelligent Text Processing and Computational Linguistics (**CICLing 2012**), March 11-17, 2011, IIT, Delhi, India.
7. The 9th International Conference on Natural Language Processing (**ICON 2011**), December 16-19, 2011, Anna University-MIT Campus, Chromepet, Chennai, India.
8. 6th Workshop on Knowledge and Reasoning for Answering Questions (**KRAQ'11**), 8th – 13th November, 2011, Thailand.
9. The 12th International Conference on Intelligent Text Processing and Computational Linguistics (**CICLing 2011**), February 20-26, 2011, Tokyo, Japan.
10. The 8th International Conference on Natural Language Processing (**ICON 2010**), Dec. 8-11, 2010, IIT, Kharagpur, India.



Lab Visited

IRIT, Toulouse, France

04th September 2011 – 26th October 2011

Institute de Recherche en Informatique de Toulouse (Computer Science Research Institute of Toulouse), France

For the project work on Question Answering system, sanctioned by **IFCPAR**

Conference Attended & Presentation

1. CLEF 2013 Conference and Labs of the Evaluation Forum

23-26 Sep. 2013

Organized by Technical University of Valencia, Spain.

- ✓ Tweet Contextualization (Answering Tweet Question) – the Role of Multi-document Summarization
- ✓ A Hybrid Question Answering System for Multiple Choice Question (MCQ)
- ✓ Multiple Choice Question (MCQ) Answering System for Entrance Examination

2. Forum for Information Retrieval Evaluation (FIRE) 2012

17-19 Dec. 2012

Organized by the Indian Statistical Institute (ISI), Kolkata, at ISI, Kolkata, India.

- ✓ Ad-hoc Information Retrieval focused on Wikipedia based Query Expansion and Entropy Based Ranking

3. 24th International Conference on Computational Linguistics (Coling 2012)

8-15 Dec.'12

Organized by the International Committee on Computational Linguistics (ICCL) at Indian Institute of Technology (IIT), Bombay, Mumbai, India

- ✓ Keyphrase Extraction in Scientific Articles: A Supervised Approach

4. 13th European Workshop on Natural Language Generation (ENLG) 2011

28 - 30 Sep. '11

Organized by the ACL Special Interest Group on Generation (SIGGEN), at Nancy, France

- ✓ May I correct the English of your paper!!!

5. CLEF 2011 Conference and Labs of the Evaluation Forum

19-22 Sep. 2011

Organized by Technical University of Amsterdam, Netherlands at Hotel CASA 400, Amsterdam, Netherlands

- ✓ A Hybrid Question Answering System based on Information Retrieval and Answer Validation
- ✓ Rule Based Plagiarism Detection using Information Retrieval

6. 8th International Conference on Natural Language Processing (ICON) 2010

8-11 Dec.'10

Organized by the International Institute of Information Technology, Hyderabad (IIIT-H), at Indian Institute of Technology (IIT), Kharagpur, India

- ✓ A Query Focused Automatic Multi Document Summarizer

7. Forum for Information Retrieval Evaluation (FIRE) 2008

12-14 Dec. 2008

Organized by the Indian Statistical Institute (ISI), Kolkata, India at Hotel Oberoi Grand, Kolkata, India

- ✓ English Bengali Ad-hoc Monolingual Information Retrieval Task Result at FIRE 2008

8. 3rd International Joint Conference on Natural Language Processing (IJCNLP)

7-12 Jan. 08

Organized by the Asian Federation of Natural Language Processing (AFNLP) at Indian School of Business (ISB), Hyderabad, India



Publication

Book

1. **A Query Focused Language Independent Multi-document Summarization and Information Retrieval for English and Bengali** Aug. 2013
Pinaki Bhaskar, Editor: Aurora Jian, ISBN 978-3-8484-0089-8, LAMBERT Academic Publishing, Saarbrücken, Germany, 2013. [Web link](#)

Book Chapter

1. **A Hybrid QA System with Focused IR and Automatic Summarization for INEX 2011** Dec. 2012
Pinaki Bhaskar, Somnath Banerjee, Snehasis Neogi and Sivaji Bandyopadhyay. Editors: Shlomo Geva, Jaap Kamps, and Ralf Schenkel. Focused Retrieval of Content and Structure: 10th International Workshop of the Initiative for the Evaluation of XML Retrieval, INEX 2011. Saarbruecken, Germany, Revised and Selected Papers. Lecture Notes in Computer Science Volume 7424, 2012, pp 207-218, DOI 10.1007/978-3-642-35734-3_18, ISBN 978-3-642-35733-6, ISSN 0302-9743, **Springer Verlag**, Berlin, Heidelberg, 2012.
2. **Language Independent Query Focused Snippet Generation** Sep. 2012
Pinaki Bhaskar and Sivaji Bandyopadhyay, Editors: T. Catarci et al. Information Access Evaluation. Multilinguality, Multimodality, and Visual Analytics: Third International Conference of the CLEF Initiative, CLEF 2012, Rome, Italy, Proceedings, Lecture Notes in Computer Science Volume 7488, 2012, pp 138-140, DOI 10.1007/978-3-642-33247-0_16, ISBN 978-3-642-33246-3, ISSN 0302-9743, **Springer Verlag**, Berlin, Heidelberg, Germany, 2012.

Journal

1. **Entailment-based Fully Automatic Technique for Evaluation of Summaries** 2013
Pinaki Bhaskar, Partha Pakray, Alexander Gelbukh and Sivaji Bandyopadhyay, In: Research in Computing Science, An open access research journal on Computer science and computer engineering, ISSN 1870-4069, Vol. 65, pp. 11-23.
2. **Answer Extraction of Comparative and Evaluative Question in Tourism Domain** 2012
Pinaki Bhaskar and Sivaji Bandyopadhyay, In: International Journal of Computer Science and Information Technologies (IJCSIT), ISSN: 0975-9646, Vol. 3, Issue 4, pp. 4610 – 4616.
3. **Cross Lingual Query Dependent Snippet Generation** 2012
Pinaki Bhaskar and Sivaji Bandyopadhyay, In: International Journal of Computer Science and Information Technologies (IJCSIT), ISSN: 0975-9646, Vol. 3, Issue 4, pp. 4603 – 4609.



Conference /Workshop

- 1. Transliterated Search System for Indian Languages** Dec. 2013

Partha Pakray and Pinaki Bhaskar, In the proceedings of the Fifth Forum for Information Retrieval Evaluation 2013 (FIRE '13), New Delhi, India, [web link](#).
- 2. Tweet Contextualization (Answering Tweet Question) – the Role of Multi-document Summarization** Sep. 2013

Pinaki Bhaskar, Somnath Banerjee and Sivaji Bandyopadhyay, In the proceedings of the Initiative for the Evaluation of XML Retrieval, INEX 2013 at CLEF 2013 Conference and Labs of the Evaluation Forum, Valencia, Spain, [web link](#).
- 3. A Hybrid Question Answering System for Multiple Choice Question (MCQ)** Sep. 2013

P. Bhaskar, S. Banerjee, P. Pakray, S. Banerjee, S. Bandyopadhyay and A. Gelbukh, In the proceedings of the Question Answering for Machine Reading Evaluation (QA4MRE) at CLEF 2013 Conference and Labs of the Evaluation Forum, Valencia, Spain, [web link](#).
- 4. Multiple Choice Question (MCQ) Answering System for Entrance Examination** Sep. 2013

S. Banerjee, P. Bhaskar, P. Pakray, S. Bandyopadhyay and A. Gelbukh, In the proceedings of the Question Answering for Machine Reading Evaluation (QA4MRE) at CLEF 2013 Conference and Labs of the Evaluation Forum, Valencia, Spain, [web link](#).
- 5. Multi-document Summarization using Automatic Key-phrase Extraction** Sep.'13

Pinaki Bhaskar, In the proceedings of the Student Research Workshop associated with the Recent Advances in Natural Language Processing (RANLP) 2013, pp. 22 – 29, Hissar, Bulgaria.
- 6. Automatic Evaluation of Summary using Textual Entailment** Sep. 2013

Pinaki Bhaskar and Partha Pakray, In the proceedings of the Student Research Workshop associated with the Recent Advances in Natural Language Processing (RANLP) 2013, pp. 30 – 37, Hissar, Bulgaria.
- 7. Answering Questions from Multiple Documents – the Role of Multi-document Summarization** Sep. 2013

Pinaki Bhaskar, In the proceedings of the Student Research Workshop associated with the Recent Advances in Natural Language Processing (RANLP) 2013, pp. 14 – 21, Hissar, Bulgaria.
- 8. Ad-hoc Information Retrieval focused on Wikipedia based Query Expansion and Entropy Based Ranking** Dec. 2012

U. Barman, P. Lohar, P. Bhaskar and S. Bandyopadhyay, In the proceedings of the Forum for Information Retrieval Evaluation (FIRE) – 2012, ISI, Kolkata, India, [web link](#) (Presented)



**Conference
/Workshop**
(continuing)

- 9. Keyphrase Extraction in Scientific Articles: A Supervised Approach** Dec. 2012
Pinaki Bhaskar, Kishorjit Nongmeikapam and Sivaji Bandyopadhyay, In the proceedings of 24th International Conference on Computational Linguistics (**Coling 2012**), pp. 17-24, IIT, Bombay, Mumbai, India. (**Presented**)
- 10. Comparative & Evaluative QA System in Tourism Domain** Nov. 2012
Pinaki Bhaskar, Bidhan Chandra Pal, and Sivaji Bandyopadhyay. Editors: N. Meghanathan and M. Wozniak. Computational Science, Engineering and Information Technology: the Second International Conference on Computational Science, Engineering and Information Technology (CCSEIT-2012). Coimbatore, India, ACM International Conference Proceeding Series. ICPS, pp. 454-460. (**Presented**)
- 11. Question Answering System for QA4MRE@CLEF 2012** Sep. 2012
P. Bhaskar, P. Pakray, S. Banerjee, S. Banerjee, S. Bandyopadhyay and A. Gelbukh, In the proceedings of the Question Answering for Machine Reading Evaluation (QA4MRE) at Conference and Labs of the Evaluation Forum (CLEF) 2012, Rome, Italy, [web link](#).
- 12. An Automatic System for Modality and Negation Detection** Sep. 2012
P. Pakray, P. Bhaskar, S. Banerjee, S. Bandyopadhyay and A. Gelbukh, In the proceedings of the Question Answering for Machine Reading Evaluation (QA4MRE) at Conference and Labs of the Evaluation Forum (CLEF) 2012, Rome, Italy, [web link](#).
- 13. A Hybrid Tweet Contextualization System using IR and Summarization** Sep. 2012
Pinaki Bhaskar, Somnath Banerjee and Sivaji Bandyopadhyay, In the proceedings of the Initiative for the Evaluation of XML Retrieval, INEX 2012 at Conference and Labs of the Evaluation Forum (CLEF) 2012, Pamela Forner, Jussi Karlgren, Christa Womser-Hacker (Eds.): CLEF 2012 Evaluation Labs and Workshop, pp. 164-175, ISBN 978-88-904810-3-1, ISSN 2038-4963, Rome, Italy, [web link](#).
- 14. Detection and Correction of Preposition and Determiner Errors in English: HOO 2012** Jun. 2012
P. Bhaskar, A. Ghosh, S. Pal, S. Bandyopadhyay, In the proceedings of the 7th Workshop on Innovative Use of NLP for Building Educational Applications in the 2012 Conference of the North American Chapter of the Association for Computational Linguistics: Human Language Technologies (NAACL-HLT), pp. 201-207, Montréal, (Québec), Canada.
- 15. A Textual Entailment System using Anaphora Resolution** 2011
P. Pakray, S. Neogi, P. Bhaskar, S. Poria, S. Bandyopadhyay, A. Gelbukh, System Report, In the proceedings of the Text Analysis Conference Recognizing Textual Entailment Track (TAC RTE) Notebook, 2011, [web link](#).



**Conference
/Workshop**
(continuing)

- 16. A Rule Base Approach for Analysis of Comparative and Evaluative Question in Tourism Domain** Nov. 2011
Bidhan Chandra Pal, Pinaki Bhaskar and Sivaji Bandyopadhyay, In the proceedings of the 6th Workshop on Knowledge and Reasoning for Answering Questions (KRAQ'11) in IJCNLP 2011, pp 29-37, Thailand.
- 17. May I correct the English of your paper!!!** Sep. 2011
P. Bhaskar, A. Ghosh, S. Pal, S. Bandyopadhyay, In the proceedings of the 13th European Workshop on Natural Language Generation (ENLG), pages 250-253, Nancy, France, ©2011 Association for Computational Linguistics. **(Presented)**
- 18. A Hybrid Question Answering System based on Information Retrieval and Answer Validation** Sep. 2011
P. Pakray, P. Bhaskar, S. Banerjee, B. Pal, A. Gelbukh, S. Bandyopadhyay, In the proceedings of Question Answering for Machine Reading Evaluation (QA4MRE) at CLEF 2011, Amsterdam, [web link](#). **(Presented)**
- 19. Rule Based Plagiarism Detection using Information Retrieval** Sep. 2011
A. Ghosh, P. Bhaskar, S. Pal, S. Bandyopadhyay. In the proceedings of PAN 2011 Lab at CLEF 2011, Amsterdam, [web link](#). **(Presented)**
- 20. A Query Focused Automatic Multi Document Summarizer** Dec. 2010
Pinaki Bhaskar and Sivaji Bandyopadhyay, In the proceeding of the 8th International Conference on Natural Language Processing (ICON 2010), pp 241-250, IIT, Kharagpur, India. **(Presented)**
- 21. Bengali Parsing System at ICON NLP Tool Contest 2010** Dec. 2010
A. Ghosh, A Das, P. Bhaskar, S. Bandyopadhyay. In the proceedings of ICON10 NLP Tool Contest: Indian Language Dependency Parsing, ICON 2010, pp 20-24, IIT, Kharagpur, India.
- 22. A Query Focused Multi Document Automatic Summarization** Nov. 2010
Pinaki Bhaskar and Sivaji Bandyopadhyay, In the proceedings of the 24th Pacific Asia Conference on Language, Information and Computation (PACLIC 24), pp 545-554, **Student Award Paper**, Tohoku University, Sendai, Japan.
- 23. JU_CSE_TE: System Description QA@CLEF 2010 – ResPubliQA** Sep. 2010
P. Pakray, P. Bhaskar, S. Pal, D. Das, S. Bandyopadhyay, A. Gelbukh, In the proceedings of the CLEF 2010 Workshop on Multiple Language Question Answering (MLQA 2010), Padua, Italy.
- 24. Theme Based English and Bengali Ad-hoc Monolingual Information Retrieval in FIRE 2010** Feb. 2010
P. Bhaskar, A. Das, P. Pakray, S. Bandyopadhyay, In the proceedings of the Forum for Information Retrieval Evaluation (FIRE) – 2010, February 2010, Gandhinagar, India, [web link](#).

**Conference
/Workshop**
(continuing)**25. Dependency Parser for Bengali : The JU System at ICON 2009** Dec. 2009

A. Ghosh, **P. Bhaskar**, A. Das, S. Bandyopadhyay. In the proceedings of ICON09 NLP Tool Contest: Indian Language Dependency Parsing, ICON 2009, pp. 7-11, Hyderabad, India.

26. English Bengali Ad-hoc Monolingual Information Retrieval Task Result at FIRE 2008 Dec. 2008

S. Bandyopadhyay, A. Das, **P. Bhaskar**. In the proceedings of the Forum for Information Retrieval Evaluation (FIRE) – 2008, December 2008, Kolkata, India, [web link](#). (Presented)

Reference**Prof. (Dr.) Sivaji Bandyopadhyay**

Dean of Faculty of Engineering and Technology (FET), Head of the Department (HOD) of Computer Science & Engineering, Jadavpur University, Kolkata, India

- ~ Phone: +91 9433579595, +91 33 24146648
- ~ Email: sivaji_cse_ju@yahoo.com, sbandyopadhyay@cse.jdvu.ac.in
- ~ Website: <http://www.sivajibandyopadhyay.com>
- ~ Relationship: M. Tech. & Ph.D. Supervisor

Dr. Sudip Kumar Naskar

Assistant Professor, Department of Computer Science & Engineering, Jadavpur University, Kolkata, India

- ~ Phone: +91 9477322327
- ~ Email: sudip.naskar@gmail.com
- ~ Website: <http://www.computing.dcu.ie/~snaskar/>
- ~ Relationship: Senior Colleague

Dr. Amitava Das

Research Scientist, University of North Texas, Research Park, Denton, TX 76203-6886, Texas, USA

- ~ Phone: +1-940-442-7560
- ~ Email: amitava.santu@gmail.com, amitava.research@gmail.com
- ~ Website: www.amitavadas.com
- ~ Relationship: Colleague