

ANIMESH MUKHERJEE

PERMANENT ADDRESS

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PERSONAL DETAILS

Gender: Male
Date of birth: 21st December, 1979
Place of birth: Kolkata, India
Present Citizenship: Indian
Father's Name: Shri Kumaresh Mukherjee
Mother's Name: Shrimati Seema Mukherjee

EDUCATION

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|-----------------|---|
| 10/2009– | Post Doctoral Researcher, Complex Systems Lagrange Lab, ISI Foundation, Torino, Italy. |
| 08/2005–07/2009 | PhD from the Department of Computer Science and Engineering. Indian Institute of Technology, Kharagpur, India. (Defended on Dec. 14, 2009). |
| 07/2003–05/2005 | Master of Technology in Computer Science and Engineering. Indian Institute of Technology, Kharagpur, India. GPA: <i>9.43/10</i> |
| 09/1999–06/2003 | Bachelor of Technology in Computer Science and Engineering. Haldia Institute of Technology, Haldia, India. Aggregate %: <i>89.8</i> |
| 1999 | Indian School Certificate Examination. Vivekananda Mission School, Joka, India. Aggregate %: <i>87</i> |
| 1997 | Indian Council of Secondary Education Examination. Vivekananda Mission School, Joka, India. Aggregate %: <i>89</i> |
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ACADEMIC ACHIEVEMENTS

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| 03/09 | Partial travel grant from IARCS (Indian Association for Research in Computing Science) for visiting EACL 2009. |
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03/09	Partial travel grant from Microsoft Research India for visiting EACL 2009.
03/09	Partial travel grant from the department for visiting EACL 2009.
09/08	Name included in the 2009 edition of Marquis Who's Who in the World.
09/08	Institute travel grant for visiting ECCS 2008.
09/08	Full financial support by ISI Foundation, Italy for attending the Fourth European Complexity PhD School 2008.
01/08–04/08	Research internship at Microsoft Research India.
06/07	Don and Betty Walker International Student Grant for visiting ACL 2007.
05/06 onwards	<i>Microsoft Research Fellowship.</i>
03/06–05/06	<i>AICTE National Doctoral Fellowship.</i>
01/06	<i>Young Scientist Award</i> from Indian Science Congress Association (ISCA). The award was delivered by the Hon'ble President of India.
05/05	Ranked 4th in MTech.
03/03	Ranked 83rd (among 50000 others all over India) in GATE with a percentile of <i>99.76</i> .
03/03	Ranked 1st in BTech (Gold Medal Awarded).

INVITED TALKS

07/07	Max Planck Institute of Evolutionary Anthropology, Leipzig, Germany. Topic: Self-organization of Sound Inventories.
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TUTORIALS

01/08	International Joint Conference on Natural Language Processing (IJCNLP), Hyderabad, India. Topic: Social Network inspired Models of NLP and Language Evolution.
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SCIENTIFIC RESPONSIBILITIES

- 09/10 *Co-Organizer* – Dynamics on and of Complex Networks - IV, (In conjunction with the European Conference on Complex Systems – ECCS), Lisbon, Portugal.
- 08/10 *Member Program Committee* – 23rd International Conference on Computational Linguistics – COLING), Beijing, China (Area: Semantics).
- 07/10 *Member Program Committee* – TextGraphs-5, Graph-based Methods for Natural Language Processing, (In conjunction with the 48th Annual Meeting of the Association for Computational Linguistics – ACL), Uppsala, Sweden.
- 05/10 *Member Program Committee* – 7th International Conference on Language Resources and Evaluation (LREC), Valletta, Malta.
- 10/09 *Guest Editor* – Special issue of *Computer Speech and Language*, Elsevier on “Network based Models of Cognitive and Social Dynamics of Language”.
- 08/09 *Program Co-Chair* – TextGraphs-4: Graph-based Methods for Natural Language Processing (In conjunction with the 47th Annual Meeting of the Association for Computational Linguistics and the 4th International Joint Conference on Natural Language Processing – ACL/IJCNLP), Singapore.
- 04/09 *Co-Editor*: Book volume on Dynamics on and of Complex Networks: Applications to Biology, Computer Science, Economics, and the Social Sciences.
- 08/08 *Member Program Committee* – TextGraphs-3: Graph-based Algorithms for Natural Language Processing (In conjunction with the 22nd International Conference on Computational Linguistics – COLING), Manchester, United Kingdom.
- 05/08 onwards *Referee* – Journal of Phonetics, Elsevier.
- 10/07 *Member Program Committee* – Dynamics On and Of Complex Networks: A Satellite Workshop of the 4th European Conference on Complex Systems (ECCS), Dresden, Germany.

PUBLICATIONS

Thesis

- **Mukherjee, A.** (2009). *Self-Organization of Speech Sound Inventories in the Framework of Complex Networks*, Doctoral Thesis, Indian Institute of Technology, Kharagpur.

Book

- Ganguly, N., Deutsch, A., and **Mukherjee, A.** (eds.). (2009). *Dynamics on and of Complex Networks: Applications to Biology, Computer Science, Economics, and the Social Sciences*, Birkhauser, Springer, Boston, ISBN: 978-0-8176-4750-6.
- Choudhury, M., Hassan, S., **Mukherjee, A.** and Muresan, S. (eds.). (2010). *Special issue on Network Models for Cognitive and Social Dynamics of Language, Computer Speech and Language*, (in press).

Journals and Book Chapters

- **Mukherjee, A.**, Choudhury, M. and Ganguly, N. Analyzing the Degree Distribution of the One-mode Projection of Alphabetic Bipartite Networks ($\alpha - BiNs$) (in submission). *preprint: <http://arXiv.org/abs/0902.0702>*.
- Choudhury, M., Ganguly, N., Maiti, A., **Mukherjee, A.**, Bruschi, L., Deutsch, A. and Peruani, F. Modeling Discrete Combinatorial Systems as Alphabetic Bipartite Networks: Theory and Applications. *Phys. Rev. E* **81**, 036103 *preprint: <http://arxiv.org/abs/0811.0499>*.
- **Mukherjee, A.**, Choudhury, M., Basu, A. and Ganguly, N. Modeling the Redundancy of Human Speech Sound Inventories: An Information Theoretic Approach *Journal of Quantitative Linguistics* (accepted).
- Pal, R., **Mukherjee, A.**, Mitra, P., and Mukherjee, J. Modelling Visual Saliency Using Degree Centrality. *IET Computer Vision* (accepted).
- Choudhury, M. and **Mukherjee, A.** (2009). The Structure and Dynamics of Linguistic Networks. In *Dynamics on and of Complex Networks: Applications to Biology, Computer Science, Economics, and the Social Sciences*, eds., Ganguly, N., Deutsch, A., and Mukherjee, A., Birkhauser, Springer, Boston, ISBN: 978-0-8176-4750-6.
- **Mukherjee, A.**, Choudhury, M., Basu, A. and Ganguly, N. (2009). Self-organization of Sound Inventories: Analysis and Synthesis of the Occurrence and Co-occurrence Network of Consonants. *Journal of Quantitative Linguistics* **16**(2), 157–184.
- **Mukherjee, A.**, Choudhury, M., RoyChowdhury, S., Basu, A. and Ganguly, N. (2008). Rediscovering the Co-occurrence Principles of the Vowel Inventories: A Complex Network Approach. *Advances in Complex Systems*, **11**(3), 371–392.
- **Mukherjee, A.**, Chakraborty, K. and Basu, A. (2008). An Adaptive Virtual Mouse for People with Neuro-Motor Disorders. *Assistive Technology Journal of the Rehabilitation Engineering Society of North America*, **20**(2), 111–124.
- Choudhury, M., Saraf, R., Jain, V., **Mukherjee, A.**, Sarkar, S. and Basu, A. (2007). Investigation and Modeling of the Structure of Texting Language. Special Issue of the *International Journal of Document Analysis and Recognition on Noisy Text Analytics*, Springer, **10**(3-4), 157–174.

- Peruani, F., Choudhury, M., **Mukherjee, A.** and Ganguly, N. (2007). Emergence of a Non-scaling Degree Distribution in Bipartite Networks: a numerical and analytical study. *Euro. Phys. Letters*, **79**(2), 28001.
- **Mukherjee, A.**, Choudhury, M., Basu, A. and Ganguly, N. (2007). Modeling the Co-occurrence Principles of the Consonant Inventories: A Complex Network Approach. *Int. Jour. of Modern Phy. C*, **18**(2), 281–295.
- Mukhopadhyay, D., **Mukherjee, A.**, Ghosh, S., Chakraborty, P. and Biswas, S. (2005). A New Approach for Message Hiding in Steganography and Audio Hiding using Substitution Technique. *Journal of The Institution of Engineers, Computer Engineering Division*, India, Vol. 86, November 2005, 41–44.

Conferences

- Choudhury, M., Chatterjee, D., and **Mukherjee, A.** (2010). Global topology of word co-occurrence networks: Beyond the two-regime power-law, *In the proceedings of COLING-10*, Beijing, China.
- **Mukherjee, A.**, Baronchelli, A., Loreto, V., Puglisi, A. and Tria, F. (2010). Ageing in the Emergence of Linguistic Categories, *ALIFE XII*, (abstract), Odense, Denmark.
- Choudhury, M. and **Mukherjee, A.** (2010). Computational Modeling of Language Evolution: Gaps and Challenges, workshop on *Mathematical Models of Language Evolution: Does the Math Add Up?*, *Evolang-10*, (abstract), Utrecht, The Netherlands.
- Biemann, C., Choudhury, M., and **Mukherjee, A.** (2009). Syntax is from Mars while Semantics from Venus! Insights from Spectral Analysis of Distributional Similarity Networks, *In the proceedings of ACL-09* (short paper), Suntec, Singapore.
- **Mukherjee, A.**, Choudhury, M., and Kannan, R. (2009). Discovering Global Patterns in Linguistic Networks through Spectral Analysis: A Case Study of the Consonant Inventories, *In the proceedings of EACL-09*, Athens, Greece.
- Choudhury, M., **Mukherjee, A.**, Garg, A., Jalan, V., Basu, A., and Ganguly, N. (2009). Language Diversity across the Consonant Inventories: A Study in the Framework of Complex Networks, workshop on *Cognitive Aspects of Computational Language Acquisition*, *EACL-09*, Athens, Greece.
- Bhowmick, P. K., **Mukherjee, A.**, Banik, A., Mitra, P., and Basu, A. (2008). A Comparative Study of the Properties of Emotional and Non-Emotional Words in the Wordnet: A Complex Network Approach, *In the proceedings of ICON-08* (poster session), Pune, India.
- **Mukherjee, A.**, Choudhury, M., Basu, A. and Ganguly, N. (2008). Modeling the Structure and Dynamics of the Consonant Inventories: A Complex Network Approach, *In the proceedings of COLING-08*, Manchester, UK.

- Nath, J., Choudhury, M., **Mukherjee, A.**, Biemann, C., and Ganguly, N. (2008). Unsupervised Parts-of-Speech Induction for Bengali, *LREC'08*, Morocco, Marrakech.
- **Mukherjee, A.**, Choudhury, M., Basu, A. and Ganguly, N. (2007). Redundancy ratio: An Invariant Property of the Consonant Inventories of the World's Languages. *In the Proceedings of ACL'07*, Prague, Czech Republic, 104–111.
- **Mukherjee, A.**, Choudhury, M., Basu, A. and Ganguly, N. (2007). Emergence of Community Structures in Vowel Inventories: An Analysis based on Complex Networks. *In the Proceedings of ACL SIGMORPHON9*, Prague, Czech Republic, 101–108.
- Gupta, A., **Mukherjee, A.**, Chakraborty, S., and Basu, A. (2007). Mapping Graphical User Interfaces to Scanning Mechanisms: A Fuzzy Approach. *In the proceedings of AACCC(07)*, Kathmandu, Nepal.
- Choudhury, M., Thomas, M., **Mukherjee, A.**, Basu, A. and Ganguly, N. How difficult is it to develop a perfect spell-checker? A Corss-linguistic Analysis through Complex Network Approach. (2007). *In Proceedings of HLT-NAACL Workshop - TextGraphs 2*, Rochester, NY, USA, 81–88.
- Choudhury, M., **Mukherjee, A.**, Basu, A., and Ganguly, N. (2006). Analysis and Synthesis of the Distribution of Consonants over Languages: A Complex Network Approach. *In Proceedings of COLING-ACL (2006)*, Sydney, Australia.
- **Mukherjee, A.**, and Basu, A. (2006). A Bangla Predictive Keyboard for people with Neuro-Motor Disorders. *Proceedings of the International Conference on Computer Processing of Bangla (ICCPB 2006)*, Dhaka, Bangladesh.
- **Mukherjee, A.**, Bhattacharya, T., Chakraborty, K., and Basu, A. (2005). An Intelligent Tutoring System In Promotion of Bangla Literacy in the Rural Scenario. *In Proceedings of the National Conference on Computer Processing of Bangla (NCCPB 2005)*, Dhaka, Bangladesh.
- **Mukherjee, A.**, Bhattacharya, S., Halder, P. K., and Basu, A. (2005), A Virtual Predictive Keyboard as a Learning Aid for People with Neuro-Motor Disorders. *In Proceedings of the 5th IEEE Conference on Advanced Learning Technologies, (ICALT 2005)*, Kaohsiung, Taiwan.
- **Mukherjee, A.**, Bhattacharya, S., Chakraborty, K., and Basu, A. (2004). Breaking the Accessibility Barrier: Development of Special Computer Access Mechanisms for the Neuro-Motor Disabled in India. *In Proceedings of the International Conference on Human Machine Interfaces - 2004 (ICHMI 2004)*, Bangalore, India.

SEMINARS, SUMMER SCHOOLS AND CONFERENCES ATTENDED

12/09

Visiting Researcher, Microsoft Research India, Bangalore

04/09	12 th Meeting of the European Chapter of the Association for Computational Linguistics (EACL), Athens, Greece.
09/08	Fifth European Conference on Complex Systems, Jerusalem, Israel.
09/08	Fourth European Complexity PhD School, Jerusalem, Israel.
10/07	Fourth European Conference on Complex Systems, Dresden, Germany.
07/07	Statistical Physics of Social Dynamics: Opinions, Semiotic Dynamics, and Language, Erice, Sicily, Italy.
07/07	Technical University of Dresden, Dresden, Germany.
06/07	45 th Annual Meeting of the Association for Computational Linguistics (ACL), Prague, Czech Republic.
01/07	International Joint Conference on Artificial Intelligence (IJ-CAI), Hyderabad, India.
05/06	Microsoft Summer School on “Algorithms, Complexity and Cryptology”, IISC Bangalore.
02/06	International Conference on Computer Processing of Bangla (ICCPB), Dhaka, Bangladesh.
01/06	93 rd Indian Science Congress, Hyderabad, India.
12/04	International Conference on Human Machine Interfaces (ICHMI), Bangalore, India.

REFERENCES

- **Anupam Basu**
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Indian Institute of Technology, Kharagpur,
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- **Niloy Ganguly**
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- **Vittorio Loreto**
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Research Scientist
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- **Ravi Kannan**
Principal Researcher
Algorithms Group,
Microsoft Research India,
Bangalore - 560080.

Torino, Italy, June 7, 2010