

Curriculum Vitae of Md Iqbal Hossain

Postdoctoral Research Associate

Department of Computer Science

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Last compiled on July 14, 2017 using L^AT_EX

1 Research Area

- Information (Network) Visualization, Graph Theory and Graph Drawing, Algorithms and Data structure, Natural Language Processing (NLP),

2 Research Experiences

1. **Duration:** 2016 to till now

Supervisor: Prof. Stephen Kobourov, Department of Computer Science, University of Arizona

Research Area: Information Visualization, Knowledge Map Representation

Project1: UAMAP: Knowledge Map of University of Arizona. url <https://www2.cs.arizona.edu/~hossain/uamap.html>

Project2: Rtopmap: World research topic map. url http://rtopmap.arl.arizona.edu/static/gallery/rtopmap_gallery.html

2. **Duration:** 2011 to 2016 (5 years)

Supervisor: Prof. Dr. Md. Saidur Rahman, Graph Drawing and Information Visualization Laboratory

Department of Computer Science and Engineering, Bangladesh University of Engineering and Technology

Research Area: Algorithms, Graph Theory, Graph Drawing, Planar graph

3. **Duration:** Oct to Dec 2014 (3 Months)

Supervisor: Prof. Dr. Giuseppe Liotta, Algorithm Engineering and Information Visualization Lab, University of Perugia, Italy

Project: “Algorithmics for MAssive and Networked DATA”

Research Area: Non-planar Graph, Complex Network, Circular Embedding, Linear Embedding <http://www.dia.uniroma3.it/~amanda/>

3 Education

- **Ph. D in Computer Science and Engineering,**
Bangladesh University of Engineering and Technology (BUET)
Year: Nov 2015
CGPA: 3.83 out of 4
Thesis: Straight-line Drawings of Planar Graphs with Constraints
- **Master of Engineering in Computer Science and Engineering**
- **Bachelor of Science in Computer Science and Engineering**

4 Work Experiences

- **Postdoctoral Research Associate (Jun 2016 to till now)**
Department of Computer Science, The University of Arizona, USA.

- building map from UofA scholarly contributions, then visualizing college, fund, citation as heat map. <http://uamap-dev.arl.arizona.edu/>
- building world first research topic map using google scholar data, then visualizing world top 1000 universities' knowledge strength and weakness, university wide citations. Also visualizing document, department on the topics map. <http://rtopmap.arl.arizona.edu/>

- **System Analyst (Dec 2013 to Jun 2016)- 2.5 years**

Dept. of Computer Science and Engineering, BUET

- Analysis, design and coding for new webbased software applications
- Administration and configuration of TCP/IP Networks, IP address assign and distribution
- Management of web accounts for faculty members and students
- Administration of central authentication server (Radius)
- Customization and course management of in e-learning moodle
- Management of student account in Google educational services
- Management of technical personnels.

5 Technical Skill

- Technical Writing and Tools: Yed, Latex, Latexdraw, xfig, latex-beamer. geozebra
- Programming and Databases: Java, SQL, python, R, mongodb, graphviz, HTML, CSS, JavaScript
- Natural Language Processing tools: Apache Lucene, Openrefine,
- Hands-on experiences on machine learning
- Previous Skill: PHP, mysql, AJAX, JQuery

6 Grant Awards

- CodeCrafters-Investortools Research Grant, 2013
- Three months research supported by “Algorithmics for MAssive and Networked DAta” @ University of Perugia, Italy, 2014

7 Other Activities

- Paper Reviewed:
 - Algorithmica, isaac, IWOCa, COCOON, jgaa, PLOSo, TCS, WALCOM, Journal of Discrete Algorithms, socg
- Organizing Committee member for:
 - Workshop on Graph Drawing and Graph Algorithms (GDGA 2013)
 - Workshop on Algorithms and Computation (WALCOM 2010, 2012)

8 Publications

Algorithms, Graph Theory and Graph layout: 15 papers, Information Retrieval and Visualization: 1 paper, Database: 1 paper, E-learning Tools: 2 papers

Journal Papers :

1. **Md. Iqbal Hossain**, Sammi Abida Salma, Md. Saidur Rahman, and Debajyoti Mondal. A Necessary Condition and a Sufficient Condition for Pairwise Compatibility Graphs. *J. Graph Algorithms Appl.* 21(3): 341-352 (2017)
2. Carla Binucci, Emilio Di Giacomo, **Md. Iqbal Hossain**, and Giuseppe Liotta. 1-page and 2-page drawings with bounded number of crossings per edge. *European Journal of Combinatorics*, 2015, in press.
3. **Md. Iqbal Hossain** and Md. Saidur Rahman, Good Spanning Trees in Graph Drawing, *Journal of Theoretical Computer Science (TCS)*, Elsevier, Vol 607, Part 2, pp. 149 - 165, 2015.
4. **Md. Iqbal Hossain** and Md. Saidur Rahman, Straight-Line Monotone Grid Drawings of Series-Parallel Graphs, *Journal of Discrete Mathematics, Algorithms and Applications (DMAA)*, Vol. 07, no. 2, 2015.
5. **Md. Iqbal Hossain**, Debajyoti Mondal, Md. Saidur Rahman, and Sammi Abida Salma, Universal Line-Sets for Drawing Planar 3-Trees. *Journal of Graph Algorithms and Applications (JGAA)*, Vol. 17, no. 2, pp. 59-79, 2013.
6. Sammi Abida Salma, Md. Saidur Rahman, **Md. Iqbal Hossain**, Triangle-Free Outerplanar 3-Graphs are Pairwise Compatibility Graphs. *Journal of Graph Algorithms and Applications (JGAA)*, Vol. 17, no. 2, pp. 81-102, 2013.
7. Abu Sayed Md. Latiful Hoque, Mohammad Mahfuzul Islam, **Md. Iqbal Hossain** and Md. Faysal Ahmed, Problem-based e-Learning and Evaluation System for Database Design and Programming in SQL. *International Journal of e-Education, e-Business, e-Management and e-Learning (IJEEEE)*, 2012 Vol.2(6): 537-542 ISSN: 2010-3654, Dubai, UAE, 2012.

Conference Papers :

8. **Md. Iqbal Hossain**, Stephen Kobourov. Research Topics Map: rtopmap, arXiv preprint arXiv:1706.04979, 25th International Symposium on Graph Drawing & Network Visualization (GD 2017), Submitted
9. **Md. Iqbal Hossain**, Sammi Abida Salma and Md. Saidur Rahman. A Necessary Condition and a Sufficient Condition for Pairwise Compatibility Graphs. In *Workshop on Algorithms and Computation (WALCOM 2016)*, *Lecture Notes in Computer Science(LNCS)* , Springer, pp.107-113, 2016.
10. Carla Binucci, Emilio Di Giacomo, **Md. Iqbal Hossain** and Giuseppe Liotta. 1-page and 2-page Drawings with Bounded Number of Crossings per Edge. In *26th International Workshop on Combinatorial Algorithms (IWOCOA 2015)*, *Lecture Notes in Computer Science(LNCS)*, Springer, 2015.
11. **Md. Iqbal Hossain**, Shaheena Sultana, Nazmun Nessa Moon, Tahsina Hashem and Md. Saidur Rahman, On Triangle Cover Contact Graphs. In *Workshop on Algorithms and Computation (WALCOM 2015)*, *Lecture Notes in Computer Science(LNCS)*, Springer, pp.323-328, 2015.
12. **Md. Iqbal Hossain** and Md. Saidur Rahman, Monotone Grid Drawings of Planar Graphs. *8th International Frontiers of Algorithmics Workshop (FAW 2014)*, *Lecture Notes in Computer Science(LNCS)*, Springer, pp.105-116, 2014.
13. **Md. Iqbal Hossain** , Shaheena Sultana, Aftab Hussain, Nazmun Nessa Moon and Md. Saidur Rahman, L-Shaped Drawings of Series-Parallel Graphs, *Proceedings 18 th International Mathematics Conference 2014*.
14. Naima Khan, Nazifa Karima, Md. Saidur Rahman and **Md. Iqbal Hossain**, Orthogonal Grid Pointset Embeddings of Maximal Outerplanar Graphs, In *Proceedings of International Conference on Electrical Engineering and Information Communication Technology (ICEEICT 2014)*, *IEEE*, 2014.
15. **Md. Iqbal Hossain** and Md. Saidur Rahman, Straight-Line Monotone Grid Drawings of Series-Parallel Graphs. *International Computing and Combinatorics Conference (COCOON 2013)*, *Lecture Notes in Computer Science(LNCS)*, Springer, pp.672-679, 2013.
16. **Md. Iqbal Hossain**, Debajyoti Mondal, Md. Saidur Rahman, and Sammi Abida Salma, Universal Line-Sets for Drawing Planar 3-Trees. In *Workshop on Algorithms and Computation (WALCOM 2012)*, *Lecture Notes in Computer Science(LNCS)*, Springer, pp 136-147, Jan. 2012.

17. **Md. Iqbal Hossain** and Muhammad Masroor Ali, SQL Query Based Data Synchronization in Heterogeneous Database Environment. In International Conference on Computer Communication and Informatics (**ICCCI 2012**), **IEEE**, pp.1-5, 10-12 Jan. 2012.

Poster (2):

18. **Md. Iqbal Hossain** and Shaheena Sultana, Md. Yusuf Sarwar Uddin, Graph Synchrony in Wireless Sensor Networks. Workshop on Wireless Network and Communication (WNC), BUET, Dhaka, 2013.
19. **Md. Iqbal Hossain** and Abu Sayed Md. Latiful Hoque, SQL-LES: a Novel e-Learning and e-Evaluation Tool for Database Education. 19th Conference of the Islamic World Academy of Sciences, Dhaka, 2013.

Reports (1):

20. Abu Reyan Ahmed, Felice De Luca, Sabin Devkota, Alon Efrat, **Md Iqbal Hossain**, Stephen Kobourov, Jixian Li, Sammi Abida Salma, and Eric Welch. L-Graphs and Monotone L-Graphs. arXiv preprint arXiv:1703.01544 (2017).