

# Mahbubul A. Majumder

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## Education

- **PhD. in Statistics, Iowa State University** **Ames, IA**  
*Department of Statistics* 2007 – 2013
- **MA. in Statistics, Ball State University** **Muncie, IN**  
*Department of Mathematical Sciences* 2005 – 2007
- **MSc. in Statistics, University of Dhaka** **Dhaka, Bangladesh**  
*Department of Statistics* 1996 – 1998
- **BSc. Honors in Statistics, University of Dhaka** **Dhaka, Bangladesh**  
*Department of Statistics* 1992 – 1996

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## Publication

- Majumder, M., Hofmann, H., Cook, D. (2013), "Validation of Visual Statistical Inference, Applied to Linear Models", *Journal of The American Statistical Association*, Vol. 108(503) pp 942-956.
- Atwood, S. E., O'Rourke, J. A., Peier, G. A., Yin, T., Majumder, M., Zhang, C., Ciano, S., Hill, J. H., Cook, D., Whitham, S. A., Shoemaker, R. C. and Graham, M. A. (2013), "Replication protein A subunit 3 and the iron efficiency response in soybean", *Plant Cell and Environment*, Vol. 37(1), pp 213-234.
- Yin, T., Majumder, M., Roy Chowdhury, N., Cook, D., Shoemaker, R. and Graham, M. (2013), "Visual Mining Methods for RNA-Seq Data: Data Structure, Dispersion Estimation and Significance Testing", *Journal of Data Mining in Genomics & Proteomics*, Vol. 4(4):139. doi: 10.4172/2153-0602.1000139.
- Zhao, Y., Cook, D., Hofmann, H., Majumder, M., and Roy-Chowdhury, N. (2013), "Mind Reading: Using an Eye-Tracker to See How People are Looking at Lineups", *International Journal of Intelligent Technologies and Applied Statistics*, Vol. 6(4) pp 393-413.
- Roy-Chowdhury N., Cook D., Hofmann H., Majumder M. (2013) "Visual Statistical Inference for High Dimension, Small Sample Size Data", *Computational Statistics*, to appear.
- Hofmann H., Follet L., Majumder M., Cook D. (2012), "Graphical Tests for Power Comparison of Competing Designs", *IEEE Transactions on Visualization and Computer Graphics*, Vol. 18(12), pp 2441-2448.
- Roy-Chowdhury N., Cook D., Hofmann H., and M. Majumder (2011), "Visual Statistical Inference for Large  $p$ , Small  $n$  Data", in *JSM Proceedings, Section of Statistical Graphics*. Alexandria, VA: American Statistical Association, pp 4436-4446.
- Majumder, M., Ali M. M. (2008), "A Comparison of Methods of Estimation of Parameters of Tukey's  $gh$  Family of Distributions", *Pakistan J. Statistics*, Vol. 24(2) pp 135-144.
- Jay, B. and Heinz, A., Majumder, M. (2007), "An Algorithm for Graceful Labeling of Cycle", *Congressus Numerantium* 186 (2007) pp. 57-63.
- Jay, B. and Heinz, A., Majumder, M. (2007), "Properties of graceful Labeling of Cycle", *Congressus Numerantium* 188 (2007) pp. 109-115.
- Majumder, M., Haque, A., Kaykobad, M. (2000), "Graceful Labelling of Complete Binary Trees", *Proceedings of International Conference on Computer and Information Technology, ICCIT 2000*.

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## Teaching

- 2014 Spring, UNO, Math3800 : Engineering Statistics evaluation -
  - 2014 Spring, UNO, Math3000 : Statistical Methods -
  - 2013 Fall, UNO, Math3800 : Engineering Statistics 4.3/5
  - 2013 Fall, UNO, Math3000 : Statistical Methods 4.1/5
  - 2012 Fall, Iowa State University, stat 305 : Engineering Statistics 4.1/5
  - 2012 Spring, Iowa State University, stat 226 : Introduction to Business Statistics 3.7/5
  - 2011 Spring, Iowa State University, Lab TA, stat 326 : Introduction to Business Statistics 4.2/5
  - 2011 Spring, Iowa State University, Lab TA, stat 401B : Introduction to Business Statistics 3.9/5
  - 2009 Spring, Iowa State University, Lab TA, stat 101 : Introduction to Statistics 3.9/5
  - 2009 Fall, Iowa State University, Lab TA, stat 101 : Introduction to Statistics 4.1/5
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## Awards

- 2012, Vince Sposito award for outstanding potential in statistical computing. Department of Statistics, Iowa State University
  - 2011, Best Poster Award, The 4th Annual Midwest Statistics Research Colloquium, University of Wisconsin, Madison
  - 2010, Student paper award for "Visual Statistical Inference for Regression Parameters". ASA Computing and Graphics Sections
  - 2010, First prize for graphical analysis of recovery data in Design for America contest as a team member of Graphics group, Department of Statistics, Iowa State University
  - 2007, Dean's Citation for Academic Excellence, Ball State University
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## Presentations

- 2012, "Power of Visual Statistical Inference in a Non-Normal Scenario", JSM, CA
  - 2012, "Turk Experiments for Visual Inference", Interface, Rice University, TX
  - 2011, "Visual Statistical Inference for Regression Parameters", JSM, FL
  - 2011, "Visual Inference for Regression Parameters", Interface, SAS campus, NC
  - 2010, Dhaka University Statistics Department Alumni Association conference, Dhaka, Bangladesh
  - 2007, 38th Southeastern International Conference on Combinatorics, Graph Theory, Boca Raton, FL
  - 2006, "On graceful labeling of cycles" in 43rd Midwest Graph Theory Conference (MIGHTY) at IUPUI, IN
  - 2006, "Data Mining" in Mathematical Association of America (INMAA) conference at Taylor University, IN
  - 2000, "Graceful Labelling of Complete Binary Trees", International Conference on Computer and Information Technology, Dhaka, Bangladesh
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## Experience

- **Iowa State University.** **Ames, IA**  
*Graduate Assistant* 2007 – 2013
  - Develop visual statistical inference procedure based on statistical graphics using R.
  - Conduct survey on human perception about statistical plots.
  - Develop web application to obtain feedback data on visual inference using HTML, MySQL and PHP
  - Research for Hy-vee, analyzed mixture models for sales data using R and SQL.
  - Consultant, analysis of continuous/categorical/repeated measured data using SAS and R.
  - Teaching assistant for business statistics and introductory statistics courses.
  - Generate visualization of large Gene sequence data (Soybean genome), Department of Agronomy
- **Novartis Pharmaceuticals Corporation** **East Hanover, NJ**  
*Modelling and Simulation group, Summer Intern* 5/2011 - 8/2011
  - Data mining on large database, General Electric - Electronic Medical Record (GE-EMR) using R, SQL
  - Develop and validate heart failure and cardiovascular risk engines.
  - Generate exploratory report, visualization of the data and develop statistical models for the analysis and assessment of data collected over multiple cardiovascular studies.
- **Hy-Vee, Inc.** **Des Moines, IA**  
*Statistical Consultant, Summer Intern* 6/2010 - 8/2010
  - Analyzed time series models for sales data to understand the sales pattern over time.
  - Implemented generalized linear models (GLM) to predict sales and forecast demand for hot-deal item.
  - Produced Nutritional Value (NuVal) reports based on categorical grocery data analysis using R, SQL.
- **Ball State University.** **Muncie, IN**  
*Graduate Assistant* 2005 – 2007
  - Research for St. Paul Travelers to predict severity of accidents.
  - Analyzed generalized linear model (GLM) for St. Paul Travelers using SAS macro/SQL.
  - Developed methods to estimate parameters of Turkey's gh distribution using Mathematica.
  - Teaching Assistant and LAB TA for various courses.
- **Sonali Bank and The Premier Bank Limited.** **Dhaka, Bangladesh**  
*Senior and Executive Officer (Head, information technology)* 1998 – 2005

- Managed IT division of 10 full-time employees to support 13 divisions and 21 branches.
  - Provided IT solutions such as online banking, credit cards, intranet & email.
  - Allocated resources and tasking and organized training for improvement of IT manpower.
  - Experienced in C++, VB6, SQL, MS Access, MySQL, PHP, HTML, Apache & Excel.
  - Designed and developed corporate web site and application software for HR.
  - Supervised 15 new branch opening issues.
  - Performed statistical analysis with transactional data and modeled credit risk.
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## **Core Technical Skills**

**Languages:** R, SAS macro, JavaScript, D3, PHP, HTML, MySQL and SQL

**Statistics:** Visual Statistical Inference, Exploratory data analysis and statistical modeling, Visualizing large data, data mining

**Analysis data:** Reshaping raw data for statistical analysis, exploring missing data, assessing data quality, extracting data from various sources such as web or data bases.

**Open Source Contributions:** R package Nullabor