Emaad Ahmed Manzoor

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eyeshalfclosed.com

EDUCATION

Carnegie Mellon University – H. John Heinz III College, USA　　　　**2016 –**
Ph.D., Information Systems. Advisor: Leman Akoglu.

Stony Brook University, USA　　　　**2015 – 2016**
Ph.D., Computer Science. Advisor: Leman Akoglu.　　　　(transferred)

King Abdullah University of Science and Technology, Saudi Arabia　　　　**2013 – 2015**
M.S., Computer Science. Advisor: Panos Kalnis.　　　　GPA: 3.96 / 4.0
Thesis: Scheduling Broadcasts in a Network of Timelines.

Birla Institute of Technology and Science - Pilani, India　　　　**2008 – 2012**
Bachelor of Engineering (Honors), Computer Science.　　　　GPA: 8.17 / 10.0
Co-op host: Yahoo!, Bangalore, India.

PUBLICATIONS & PATENTS

<u>Emaad Manzoor</u>, Sadegh M. Milajerdi, Leman Akoglu. *Fast Memory-Efficient Anomaly Detection in Streaming Heterogenous Graphs.* KDD 2016. **(research-track oral, top 70/784 submissions)**

<u>Emaad Ahmed Manzoor</u>, Panos Kalnis. *Method and apparatus for scheduling broadcasts in social networks.* US Provisional Application 62/118,570, filed February 2015.

AWARDS

- SBU Institute of Advanced Computational Science Young Writer's Award ($500).　　**2016**
- ACM SIGKDD Student Travel Award ($750).　　**2016**
- Stony Brook University Special CS Department Chair Fellowship ($8,000).　　**2015**
- Worldwide Top 100 (of 1720 teams), IEEE Xtreme 8.0 Programming Competition.　　**2015**
- Best Mashery Hack, PennApps X, Philadelphia (sponsored by Intel).　　**2014**
- International Travel Grant, PennApps X, Philadelphia ($500).　　**2014**
- King Abdullah University of Science and Technology Fellowship ($140,000)[1].　　**2013**
- Erasmus Mundus LCT Masters Scholarship (EUR 40,000)[2].　　**2013**
- Employee Performance Bonus, Yahoo! (INR 35,000).　　**2012, 2013**
- Google Teaching Scholarship, BITS - Pilani, Goa Campus (INR 16,000)[3].　　**2011**
- Consultancy Development Cell Fellowship, Ministry of Science & Tech., India (INR 10,000).　　**2009**

RESEARCH

Predicting Purchase Behavior from Financial Sensor Logs　　　　**Aug 2016 –**
- Novel "budgeted" point process to predict temporal, categorical and real-valued outcomes.
- Quantify magnitude and pattern of causal influence between income and purchase behavior.
- Cluster customers based on income response and purchase patterns to guide income-frequency policies.

Detecting Anomalous Networks in Edge Streams　　　　**Aug 2015 – Aug 2016**
- Online clustering-based anomaly detection on graph objects with node and edge types.
- Applied to real-time detection of malicious software behavior from system call log streams.
- Project page at bit.ly/streamspot/. Code in C++ at github.com/sbustreamspot/.

Scheduling Broadcasts in a Network of Timelines　　　　**Jan 2014 – May 2015**
- Quantified/measured the impact of "monotony aversion" on attention in social network timelines.
- Designed a broadcast scheduling algorithm to maximize the attention received under competition.
- Patent filed with the USPTO, unpublished manuscript at arxiv.org/abs/1610.06052.

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[1] $70,000/year for two years including tuition ($35,000), health insurance ($15,000), stipend ($20,000) and housing.
[2] Declined. Category A scholarship: EUR 20,000/year for two years. Awarded to 4 international applicants.
[3] For the undergraduate Software Development for Portable Devices course taught by Prof. Mangesh Bedekar.

INDUSTRIAL EXPERIENCE (FULL-TIME)	**Yahoo!**, Bangalore. Software Engineer.	**Jul 2012 – Aug 2013**

Yahoo!, Bangalore. Software Engineer. — **Jul 2012 – Aug 2013**

- Built (team of 4) a system for streaming "trending-topic" detection from user-generated content.
- Large impact within the company, improved over previous trend-detection latency by 600%.
- Implemented with Apache Storm, Kafka, HBase and Java.

INDUSTRIAL EXPERIENCE (INTERN)

Quantitative Engineering Design, San Francisco (remote). Research Intern. — **Summer 2015**

Advised by cofounders William Wu (Ph.D., EE, Stanford) and Jiehua Chen (Ph.D., Statistics, Stanford).
- Designed and developed an online variant of a Bayesian model to predict financial fraud.
- Developed a reference implementation of Mondrian Forests (online random forests).
- Designed a distributed system architecture to enable online training of a classifier ensemble.

Oregon State University, Corvallis (remote). Google Summer of Code Intern. — **Summer 2014**

- Designed and developed a REST service to enable IPMI operations over HTTP.
- Designed and developed an extensible, hierarchical CLI that delegates to the REST service.
- Design and implementation discussed at eyeshalfclosed.com/tags/#gsoc2014-ref.

Tachyon Technologies, Bangalore. Research Intern. — **Summer 2012**

Advised by cofounder and MIT TR35 awardee Ram Prakash Hanumanthappa.
- Developed a fast, simple and effective algorithm to de-warp photographs of flat book pages.
- Implemented an algorithm from the low-level vision literature to flatten color gradients.
- Applied algorithms to transform photos of comic book pages into web-ready digital comic panels.
- Packaged into an Android app interfacing with my code in MATLAB over a Python HTTP bridge.

Yahoo!, Bangalore. Software Engineer Intern. — **Fall 2011**

- Extended the "trending-topic" detection system to be centrally configurable and multi-threaded.
- Implemented a research prototype to detect geographically and demographically niche events.
- Offered and accepted a full-time position (top 3/14 interns from BITS – Pilani University).

University of Massachusetts, Lowell (remote). MVHub Summer of Code Intern. — **Summer 2011**

- Built a Debian package for MVHub, a directory of non-profit services.
- Wrote Perl scripts to automate building and updating the Debian package.
- Wrote a Launchpad recipe and set up a PPA to conveniently host and install the package from.

TEACHING

- Programming Languages and Compiler Design. Course project design and grading. — **Spring 2012**
- MIT Indian Mobile Initiative. Android development lab sessions and tutoring. — **Summer 2011**
- Software Development for Portable Devices. Courseware at bit.ly/emaadcourseware. — **Spring 2011**

SERVICE

- External reviewer for SocInfo, WWW, EuroSys, VLDBJ, CIKM.
- Organized TechFM, a weekly technical talk series at Yahoo! on math, science and technology.
- Frequent participant at Random Hacks of Kindness.

LANGUAGES

- Analysis: Python (preferred), Julia (beginner)
- Performance: C++ (preferred), Java (for distributed systems)