Emaad Ahmed Manzoor

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Education

King Abdullah University of Science and Technology **Aug 2013 – May 2015 (expected)**
Master of Science, Computer Science. GPA: 3.96 / 4.0
Thesis title: Scheduling broadcasts in a network of timelines. *Advisor:* Panos Kalnis.

Birla Institute of Technology and Science - Pilani **Aug 2008 – May 2012**
Bachelor of Engineering (Honours), Computer Science. GPA: 8.17 / 10.0

Research Experience

Scheduling Broadcasts in a Network of Timelines **Jan 2014 – Now**
Advised by Panos Kalnis, InfoCloud Research Group, KAUST.
Quantified the interactions between behavioural phenomena that influence attention in networks of timelines. Designed and validated broadcast schedules that maximize the expected attention obtained.
- Introduced and quantified monotony aversion exhibited by social network users with timelines.
- Formulated a timeline information exchange process and the attention potential objective function.
- Framed the optimization problem as a nonlinear integer program, presented and validated algorithms.

Detecting Malware Android Applications **Aug – Dec, 2013**
Advised by Xiangliang Zhang, MINE Lab, KAUST.
Applied graphical models from natural language processing to an Android permission dataset to reduce dimensionality in an interpretable manner. Evaluated its performance on a malware classification task.
- Reformulated the classification task as an NLP problem, with permissions forming the vocabulary.
- Reduced dimensionality while remaining interpretable using Latent Dirichlet Allocation.
- Evaluated the subsequent classification performance of various machine learning algorithms.

Publications & Patents

Emaad Ahmed Manzoor, Haewoon Kwak and Panos Kalnis. Scheduling Broadcasts in a Network of Timelines. *Under review for KDD 2015.*

Emaad Ahmed Manzoor and Panos Kalnis. Method and apparatus for scheduling broadcasts in social networks. *Filed February 2015.*

Work Experience

Quantitative Engineering Design, San Francisco. Research Intern. **Apr 2015 – Now**
Research and development for a machine learning project.

Oregon State University, Corvallis. Google Summer of Code Intern. **May – Aug, 2014**
Designed and developed a framework that enables running IPMI operations on data-centre machines from systems that lack the standard IPMI utilities, including devices like Android smartphones.
- Designed and developed a REST service enabling IPMI operations over HTTP.
- Designed and developed an extensible, hierarchical CLI that delegates to the REST service.
- Designed and implemented mechanisms for fine-grained user-machine permission management.

Yahoo!, Bangalore. Software Engineer. **Jul 2012 – Aug 2013**
Built a streaming system for event detection from live content feeds like Twitter, Facebook and newswire. Reduced event detection latency by over 600%. Powers *Trending Now* on the Yahoo! homepage.
- Wrote Storm components for streaming n-gram counting and cardinality estimation.

- Designed and evaluated HBase schemas to minimize the duration of failure recovery.
- Wrote adapters to preprocess source content from Kafka before routing it to Storm.

Tachyon Technologies, Bangalore. Research Intern. **May – July, 2012**
Designed algorithms to automatically transform comic book photographs into device-friendly comic panels. Advised by CEO and MIT TR35 awardee Ram Prakash Hanumanthappa.
- Developed a fast algorithm to de-warp photographs of flat book pages.
- Implemented an algorithm from the low-level vision literature to flatten colour gradients.
- Built an Android app interfacing with my algorithms in MATLAB over a Python HTTP bridge.

Yahoo!, Bangalore. Software Engineer Intern. **Jul – Dec, 2011**
Extended the event detection system to be centrally configurable and multi-threaded. Reduced deployment time from days to a few minutes. Accepted a full-time position (offered to 3/14 interns).
- Wrote an XML-based configuration system that also enabled fine-grained load balancing.
- Refactored code to process multiple locales in parallel while balancing per-machine load.
- Implemented a research prototype to detect geographically and demographically niche events.

University of Massachusetts, Lowell. MVHub Summer of Code Intern. **Jun – Sep, 2011**
Built a Debian package for MVHub, a directory of non-profit services maintained by the Community Software Lab at the University of Massachusetts, Lowell.
- Wrote configuration scripts as per the Debian package specifications.
- 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.

Awards

- Worldwide Top 100 (of 1720 teams), IEEE Xtreme 8.0 Programming Competition. **2014**
- Best Mashery Hack, PennApps X, Philadelphia (sponsored by Intel). **2014**
- International Travel Grant, PennApps X, Philadelphia (sponsored by PennApps). **2014**
- King Abdullah University of Science and Technology Fellowship. **2013**
- Erasmus Mundus LCT Masters Scholarship[1] (awarded to 4 international applicants). **2013**
- Employee Performance Bonus, Yahoo!. **Q2, Q3 2013**
- Winner, Random Hacks of Kindness, Bangalore. **2011**
- Consultancy Development Cell Fellowship, Ministry of Science and Technology of India. **2009**

Talks

- *Time-Inconsistent Planning.* InfoCloud Seminar. **May 2014**
- *Time-sensitive Diffusion Network Inference.* Machine Learning Project Presentation. **May 2014**
- *Reinforcement Learning.* Machine Learning Course Lecture. **Apr 2014**
- *Finding Communities in Networks.* Data Mining Course Lecture. **Nov 2013**
- *Reviving Failed Classifiers with Random Forests.* Tech talk at Yahoo!. **May 2013**
- *Building a Linux cluster with Beanstalkd.* Tutorial at PyCon India. **Sep 2012**
- *quFiles: The right file at the right time.* Data Storage Technologies Seminar. **Nov 2012**

Teaching

- *Programming Languages and Compilers.* Course project design and grading. **Spring 2012**
- *MIT Indian Mobile Initiative.* Android development lab sessions and tutoring. **Summer 2011**
- *Software Development for Portable Devices.* Google-funded teaching assistant. **Spring 2011**

[1] Declined, having accepted the KAUST Fellowship.

Service	External reviewer for WWW, EuroSys, VLDBJ, CIKM. Organised TechFM, a weekly technical talk series at Yahoo! on math, science and technology.
Languages	Java, Python, C.