Emaad Ahmed Manzoor

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Education

King Abdullah University of Science and Technology **Aug 2013 – Aug 2015 (expected)**
Master of Science, Computer Science. GPA: 3.95 / 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

Work Experience

Oregon State University, Corvallis. Google Summer of Code Intern. **May – Aug, 2014**
Constructed 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.

Research Experience

Scheduling Broadcasts in a Network of Timelines **Jan 2014 – Now**

Advised by Panos Kalnis, InfoCloud Research Group, KAUST.

Designing broadcast scheduling algorithms to maximize organic reach in an online social network.

- Introducing and quantifying monotony aversion exhibited by social network users with timelines.
- Validating bursty circadian rhythms of social network users and its influence on information overload.
- Formulating the objective function and developing a method to find the optimal schedule.

Detecting Malware Android Applications **Aug – Dec, 2013**

Advised by Xiangliang Zhang, MINE Lab, KAUST.

Applying machine learning algorithms to classify Android applications as malware or not, based only on the permissions they request.

- 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.

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**
- 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**

Leadership

Organizational positions held as an undergraduate at BITS - Pilani Goa Campus:

- Coordinator, Publicity and Public Relations, Waves Cultural Festival. **2010 – 2011**
- Core Member, Literary and Debating Club. **2010 – 2011**
- Chief Designer, Department of Publicity and Public Relations. **2009 – 2010**
- Core Member, Department of Journalism and Media Affairs. **2009 – 2010**
- Event Manager, Geek 'N Latin, Quark Technical Festival. **2009**
- Event Manager, Press Corps, Waves Cultural Festival. **2009**

Languages

Java (preferred), Python, C.

[1] Declined, having accepted the KAUST Fellowship.