Emaad Ahmed Manzoor

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Education

Carnegie Mellon University, USA **2016 –**
Ph.D., Information Systems & Management (H. John Heinz III College).

Stony Brook University, USA **2015 – 2016**[1]
Ph.D., Computer Science. Advisor: Leman Akoglu.

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

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

Research

1. *Learning Interpretable Concept Representations for Prescriptive Policy Exploration.*
   Dokyun Lee, Emaad Manzoor, Zhaoqi Cheng.
   To be submitted, 2018.

2. xStream*: Outlier Detection in Feature-Evolving Data Streams.*
   Emaad Manzoor, Hemank Lamba, Leman Akoglu.
   ACM SIGKDD 2018 (research track with short presentation, top 181/983 = 18.41%).
   `https://cmuxstream.github.io/`

3. RUSH! *Targeted Time-limited Coupons via Purchase Forecasts.*
   Emaad Manzoor, Leman Akoglu.
   ACM SIGKDD 2017 (applied data science track with poster, top 85/396 = 21.47%).
   `https://github.com/emaadmanzoor/rush/`

4. *Fast Memory-Efficient Anomaly Detection in Streaming Heterogenous Graphs.*
   Emaad Manzoor, Sadegh M. Milajerdi, Leman Akoglu.
   ACM SIGKDD 2016 (research track with oral, top 70/784 = 8.93%).
   `https://sbustreamspot.github.io/`

5. *Scheduling Broadcasts in a Network of Timelines.*
   Emaad Ahmed Manzoor, Haewoon Kwak, Panos Kalnis.
   Unpublished manuscript (extended version appears as a master's thesis), 2015.
   Patent filed in February, 2015 (`https://patents.google.com/patent/WO2016132332A1`).

Awards

- CMU GSA/Provost Office Conference Funding Award ($500). **2017**
- ACM SIGKDD Student Travel Award ($1,750). **2016, 2017**
- Institute of Advanced Computational Science Young Writer's Award ($500). **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 & Travel Grant, PennApps X, Philadelphia ($500). **2014**

Industrial Experience (Full-Time)

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.

[1] Incomplete, transferred.

Industrial & Research Experience (Intern)

Pinterest Labs, San Francisco. Research Intern. **Summer 2018**
Upcoming internship with the Knowledge/Content Engineering team.
- Research on deep learning and recommendation systems towards growing the Pinterest Taste Graph.

Max Planck Institute for Software Systems, Kaiserslautern. Research Intern. **Summer 2017**
Advised by Manuel Gomez-Rodriguez.
- Research on crowdsourced knowledge markets and stochastic optimal control.

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

See `http://www.eyeshalfclosed.com/teaching/` for teaching material and student evaluations.
- 95-865 Unstructured Data Analysis (CMU). **Fall 2017, Spring 2018**
- 95-813 Intermediate Databases (CMU). **Fall 2017**
- CSE-590 Supercomputing (Stony Brook). **Spring 2016**
- CSE-101 Introduction to Computers & IT (Stony Brook). **Spring 2016**
- Programming Languages and Compiler Design (BITS - Pilani). **Spring 2012**
- MIT Indian Mobile Initiative (BITS - Pilani). **Summer 2011**
- Software Development for Portable Devices (BITS - Pilani). **Spring 2011**

Languages

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