Ray (Rui) Peng

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EDUCATION

Carnegie Mellon University, *Pittsburgh, PA*   12/2017 (expected)

M.S. in Machine Learning

  Current courses: Machine Learning with Large Datasets, Deep Learning, Distributed Systems

Hong Kong University of Science and Technology, *Hong Kong*   **GPA: 3.9/4.0**   09/2012 ~ 06/2016

B.S. in Computer Science and Applied Mathematics

  Thesis: Object Detection from Videos (ranked #5 globally)

  Selected courses: Advanced Algorithms, Search Engine, Computer Graphics, Data Structures and OOP

University of Toronto, *Canada*   **GPA: 3.9/4.0**   01/2015 ~ 04/2015

Exchange Student at the Department of Computer Science

  Selected courses: Operating Systems (top score), Software Engineering

SKILLS

Proficient in Python, C/C++, Java, JavaScript, Go, Ruby, Hadoop, Linux, Git

Familiar with Ruby on Rails, Django, MongoDB, Caffe, Haskell, OCaml, Matlab

PROFESSIONAL EXPERIENCE

High-Throughput Multi-Machine Storage System   **Internship at MIT**   06/2015 ~ 08/2015

- Achieved 7x compression by designing a customized data compression algorithm on frequency domain.
- Optimized system throughput to be 600 simultaneous connections by turning server worker configurations, number of server processes, and Postgres parameters.
- Load-balanced using Nginx, along with HTTP servers connected to a Postgres database server via TCP.
- Built, tuned and tested two implementations: Django with async workers, and Go with Goroutines.
- Visualized real-time and historical data with an online interface built in Python, Django, and JavaScript.

PROJECTS

Naive Bayes in Hadoop Framework   09/2016

- Implemented Naive Bayes classifier using Hadoop MapReduce framework in Java.
- Employed Amazon Web Services (AWS) and Elastic MapReduce (EMR) for training and performing classification of 2 million DBpedia articles into 17 categories with high accuracy.

Multi-client Distributed Key-Value Database Server   09/2016

- Implemented operations including insert, query in distributed systems elegantly in Go and Goroutines.
- Facilitated simultaneous consistent connections between multiple clients and server with Go channels.

Course Timetable Planner Web App (http://raypeng.github.io/coursereg)   08/2015

- Handled searching and adding courses by keywords, time clash detection, and calendar import/export.
- Crawled course data from the school's registrar website into structured JSON files using RegEx in Python.
- Designed and built a user-friendly front-end using very modular JavaScript, jQuery and HTML5.
- Minimized latency with a back-end-less static design, where data is loaded on the front-end with RequireJS.
- Reached hundreds of daily active users, for thousands of total interaction hours in course planning period.

Personalized Reading Web App: Briefr   08/2014

- Built a web app that displayed top trending articles from Twitter in a Medium-like unified reading experience.
- Employed the Ruby on Rails framework for fast development, MongoDB for storage, Bootstrap for UX.
- Utilized AlchemyAPI for text analysis, keyword extraction and topic modelling.
- Collaborated smoothly with a UX designer, 2 front-end developers and a business personnel remotely.

Operating Systems   04/2015

- Implemented key components in modern operating systems in C.
- Developed a memory allocator with multi-threading support, a virtual address translator with two-level page tables using demand paging and four page replacement algorithms, an ext2 file system that supports all common file and directory operations.
- Ensured implementations passed all tests, were well documented and had efficient run times.

PUBLICATION

A Data-Driven Neuron Pruning Approach towards Efficient Deep Architectures   05/2016

NIPS submission: *http://arxiv.org/abs/1607.03250, one of the first authors*

- Researcher at SenseTime Group Ltd HK, supervised by Dr. Yu-Wing Tai