

Yang Pan

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EDUCATION

Rice University

Master of Computer Science

Houston, Texas

Aug. 2017 – Dec. 2018 (expected)

Shanghai Jiao Tong University

Bachelor of Science in Engineering, Automation

Shanghai, China

Sept. 2013 – June 2017

EXPERIENCE

Facebook, Inc.

Performance and Capacity Engineer Intern

Menlo Park, California

May 2018 – Aug. 2018

- Built a general validation framework for service health and data correctness validations, improving reliability of services owned by Capacity Engineering and Analysis team at Facebook Infrastructure Foundation.
- Provided common validation facilities that can be shared accross different services and miscellaneous data.
- Supported custom validation logic to be plugged in for executing individual service or data validation.
- Supported both periodic validations which are automatically scheduled, and on-demand validations that can be triggered by users anytime from any machine, making the framework flexible and convenient to use.
- Automated the entire workflow, from service and data validations to remediation and logging results into dataset.

Shanghai Jiao Tong University

Research Assistant

Shanghai, China

Dec. 2016 – June 2017

- Studied image hashing and retrieval algorithms on large data sets, especially data dependent supervised hashing.
- Introduced additional constraints to the optimization problem of Latent Factor Hashing (LFH), and applied two-stage optimization method to maximize the penalized log-likelihood function.
- Introduced nonlinearity in regression models, and compared them using Akaike information criterion (AIC).

SELECTED PROJECTS

MyDB Database System

Supervised by Prof. Christopher Jermaine

Houston, Texas

Jan. 2018 – May 2018

- Implemented infrastructure of database system, including an LRU buffer manager and record management tools.
- Implemented two-pass multiway merge sort (TPMMS) algorithm, and B+ tree based on the infrastructure.
- Built an SQL front end with syntactic and semantic checking using flex and bison, together with a back end that excutes selection, projection, join (supporting scan join and sort merge join), aggregate and grouping operations.
- Implemented logical optimization using cost estimation, and physical optimization by annotating expressions.

Code Optimizer for ILOC

Supervised by Prof. Keith Cooper

Houston, Texas

Mar. 2018 – Apr. 2018

- Built a scanner with flex and a parser with bison for the intermediate representation language ILOC.
- Divided parsed code into basic blocks, built up control-flow graph (CFG), and detected all loops inside the graph.
- Implemented super-local value numbering algorithm to reuse computed value, reducing 8% of CPU cycles.
- Implemented loop unrolling optimization that unrolls inner loops by a factor of four, reducing 6% of CPU cycles.

Reliable File Transfer and Intra-Domain Routing Protocols

Supervised by Prof. T. S. Eugene Ng

Houston, Texas

Sept. 2017 – Nov. 2017

- Designed and implemented a reliable file transfer protocol on unreliable network, using cyclic redundancy check (CRC) and sliding window, which could deal with up to 95% packet loss, duplicate, delay, mangle, and reorder.
- Implemented link-state (LS) and distance-vector (DV) routing protocols in C++ for intra-domain routing.

TECHNICAL STRENGTHS

Languages

Proficient in C/C++, Python; Comfortable with Java, JavaScript, Haskell, MATLAB, Verilog

Platforms

Windows, macOS, Linux (Ubuntu)

Tools

Thrift, MySQL, PyTorch, Keras, scikit-learn, OpenCV, L^AT_EX, Multisim