YANG PAN

yp20@rice.edu ⋄ (+1) 346-228-1373
8181 Fannin Street Houston, Texas 77054

EDUCATION

Rice University Houston, Texas
Master of Computer Science *Aug. 2017 - Dec. 2018 (expected)*

Shanghai Jiao Tong University Shanghai, China
Bachelor of Science in Engineering, Automation *Sept. 2013 - June 2017*

EXPERIENCE

Performance and Capacity Engineer Intern @Facebook, Inc. Menlo Park, California
Supervised by Hao Shang, Infrastructure Foundation Team *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.
- 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.

Research Assistant @Shanghai Jiao Tong University Shanghai, China
Advised by Prof. Jie Yang, Department of Automation *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 Houston, Texas
Supervised by Prof. Christopher Jermaine *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 Houston, Texas
Supervised by Prof. Keith Cooper *Mar. 2018 – Apr. 2018*

- Built a scanner with flex and a parser with bison for the intermediate representation language ILOC.
- Implemented super-local value numbering algorithm to reuse computed value, reducing about 8% of cycles.
- Implemented loop unrollling optimization that unrolls inner loops by a factor of four, reducing about 6% of cycles.

Reliable File Transfer and Intra-Domain Routing Protocols Houston, Texas
Supervised by Prof. T. S. Eugene Ng *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 Haskell, MATLAB, Verilog
Platforms	Windows, macOS, Linux (Ubuntu)
Tools	PyTorch, Keras, scikit-learn, OpenCV, MySQL, LaTeX, Multisim