

# Yang Pan

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## EDUCATION

<b>Rice University</b> Master of Computer Science	Houston, Texas <i>Aug. 2017 – Dec. 2018 (expected)</i>
<b>Shanghai Jiao Tong University</b> Bachelor of Science in Engineering, Automation	Shanghai, China <i>Sept. 2013 – June 2017</i>

## EXPERIENCE

<b>Facebook, Inc.</b> <i>Performance and Capacity Engineer Intern</i>	Menlo Park, California <i>May 2018 – Aug. 2018</i>
<ul style="list-style-type: none"><li>· 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.</li><li>· Provided common validation facilities that can be shared accross different services and miscellaneous data.</li><li>· Supported custom validation logic to be plugged in for executing individual service or data validation.</li><li>· 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.</li><li>· Automated the entire workflow, from service and data validations to remediation and logging results into dataset.</li></ul>	
<b>Shanghai Jiao Tong University</b> <i>Research Assistant</i>	Shanghai, China <i>Dec. 2016 – June 2017</i>
<ul style="list-style-type: none"><li>· Studied image hashing and retrieval algorithms on large data sets, especially data dependent supervised hashing.</li><li>· 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.</li><li>· Introduced nonlinearity in regression models, and compared them using Akaike information criterion (AIC).</li></ul>	

## SELECTED PROJECTS

<b>MyDB Database System</b> <i>Supervised by Prof. Christopher Jermaine</i>	Houston, Texas <i>Jan. 2018 – May 2018</i>
<ul style="list-style-type: none"><li>· Implemented infrastructure of database system, including an LRU buffer manager and record management tools.</li><li>· Implemented two-pass multiway merge sort (TPMMS) algorithm, and B+ tree based on the infrastructure.</li><li>· 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.</li><li>· Implemented logical optimization using cost estimation, and physical optimization by annotating expressions.</li></ul>	
<b>Code Optimizer for ILOC</b> <i>Supervised by Prof. Keith Cooper</i>	Houston, Texas <i>Mar. 2018 – Apr. 2018</i>
<ul style="list-style-type: none"><li>· Built a scanner with flex and a parser with bison for the intermediate representation language ILOC.</li><li>· Divided ILOC code into basic blocks, built up control-flow graph (CFG), and detected all loops inside the graph.</li><li>· Implemented super-local value numbering algorithm to reuse computed value, reducing 8% of CPU cycles.</li><li>· Implemented loop unrolling optimization that unrolls inner loops by a factor of four, reducing 6% of CPU cycles.</li></ul>	
<b>Reliable File Transfer and Intra-Domain Routing Protocols</b> <i>Supervised by Prof. T. S. Eugene Ng</i>	Houston, Texas <i>Sept. 2017 – Nov. 2017</i>
<ul style="list-style-type: none"><li>· 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.</li><li>· Implemented link-state (LS) and distance-vector (DV) routing protocols in C++ for intra-domain routing.</li></ul>	

## TECHNICAL STRENGTHS

<b>Languages</b>	Proficient in C/C++, Python; Comfortable with Java, JavaScript, Haskell, MATLAB, Verilog
<b>Platforms</b>	Windows, macOS, Linux (Ubuntu)
<b>Tools</b>	Thrift, MySQL, PyTorch, Keras, scikit-learn, OpenCV, L <sup>A</sup> T <sub>E</sub> X, Multisim