Yang Pan

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EDUCATION

Rice University — Houston, Texas
Master of Computer Science — *Aug 2017 – Dec 2018*

Shanghai Jiao Tong University — Shanghai, China
Bachelor of Science in Engineering, Automation — *Sep 2013 – Jun 2017*

EXPERIENCE

Google LLC — Sunnyvale, California
Software Engineer, Core Systems — *Feb 2019 – Present*

· Building a multithreading C++ library for mobile data download, which enables configuarable download of file groups as atomic units, including but not limited to machine learning models, language packages, etc.

Facebook, Inc. — Menlo Park, California
Intern, Infrastructure Foundation — *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.

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.
· 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 unrollling optimization that unrolls inner loops by a factor of four, reducing 6% of CPU cycles.

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