Seven research, academic and professional projects are listed with time order. Research (published) papers are with source code in each research project. Academic projects are described with problem assignment and solution (report).

1. Research project about a deterministic hashing scheme for high-performance network applications. The research work intends to provide novel hash collision resolution mechanisms with high deterministic performance extremely desired by multi-threading Network Processing Unit (or NPU). The project is implemented in Java and the related paper is to be published in ICNC 2015.

LOC: 4800; Keywords: Java, hash table, collision resolution, bitmap, on-chip filter.

2. Research project about a hierarchical hashing scheme to accelerate IP lookup (longest prefix match or LPM). The research work intends to overcome a major bottleneck of modern routers by promoting LPM performance using innovative hashing. The project is implemented in C++ and the related paper is published in GLOBECOM 2014.

LOC: 2100; Keywords: C++, hash table, LPM, bitmap.

3. Research project about a TCAM-based packet classification approach using divide-and-conquer methodology. The research work aims at reducing costly TCAM storage by means of novel encoding method on range representation. The project is simulated in Java and the related paper is published in ICCCN 2014.

LOC: 800; Keywords: Java, divide-and-conquer, range match.

4. Website project. My friend and I put forward a simple idea about quality improvement of Chinese tourist at that time and I developed the whole project. The website was temporarily put online but I am too busy to run it as business. The project is implemented in Java.

LOC: 200K+ (Java, JS, JQuery, freemarker, SQL statements) not including HTML/CSS lines; Keywords: Java, JEE, MySQL, Tomcat, struts2, spring and hibernate, Ajax, java mail, lucence, freemarker, JS/JQuery.

5. Concurrency project in Erlang. This is a class project in concurrency lesson. The project simulates an elevator and implemented in Erlang.

LOC: 700; Keywords: Erlang, concurrent programming, message passing, light-weight process.

6. Concurrency project in Java. This is a class project in concurrency lesson. The project extensively uses advanced lock mechanisms in Java to achieve synchronous communication in channel by simulating message passing using shared memory.

LOC: 420; Keyword: Java, concurrent programming, synchronous message passing.

7. Distributed system project in Java. This is a class project in distributed-system lesson. The project uses multi-threading and pub-sub pattern (RTI Data Distribution Service) to simulate local public transportation.

LOC: 4300; Keyword: Java, distributed service, publisher/subscriber, multi-threading.