KUANG-YU LI

IT Master Graduate focusing on Cloud Computing

Allmandring 20D, Stuttgart, Germany 70569 | +49 152 07439908

kuangyu.li@outlook.com | LinkedIn: kuang-yu-li-lumiere | GitHub: kuangyu0801

EDUCATION

Universität Stuttgart – Stuttgart, Germany   Oct. 2019 - present
M.S. in Information Technology, German Grading: 1.8 (Gut)
National Chiao Tung University (NCTU) – Hsinchu, Taiwan   Sept. 2009 - Oct. 2015
B.S. in Electrical Engineering and Computer Science, GPA: 3.9/4.3 *M.S. in Electronics Engineering and Electronics*, GPA: 4.27/4.3

EXPERIENCE

IBM – Böblingen, Germany   Apr. 2021 - present
Intern

· Developed an integrated development environment with remote development and debugging capabilities, static code analysis and unit test integration.

MediaTek, Inc. – Hsinchu, Taiwan   Dec. 2015 - Aug. 2019
Firmware Engineer

· Developed firmware in Android smartphone for 5G/4G mobile communication digital signal processing
· Wrote 6K code lines, reviewed and maintained 20K code lines in C/C++ on Red Hat Enterprise Linux
· Designed firmware architecture, implemented algorithm, developed and published tests with Python and Perl scripts for performance verification
· Participated in 3 large-scale projects(over 200K code lines and 1000 engineers) and collaborated and communicated with software and hardware teams across 9 countries
· Involved in all stages of SDLC for over 10 MediaTek's smartphone products including world's fastest 5G Helio M70 with download speed 4.7Gbps in 2019
· Handled technical change requests with troubleshooting, log examination, issue analysis, solution implementation and patch releasing for global including Samsung, LG and Huawei, etc.
· Received 7 times MediaTek vAward in recognition of top 10% performance of the month

TECHNICAL STRENGTHS

Programming	Java, Python, C/C++, JSON, HTML/CSS, SQL, Perl, MATLAB, Assembly
Tool	Git, GitHub, Perforce, IntelliJ, PyCharm, Android Studio, VirtualBox, Docker
Platform & Protocol	Google Firebase, JavaServer Pages (JSP), OpenFlow, TCP/IP, HTTP, REST

PROJECTS

Content-Based Router for Publish-Subscribe Service Java, REST API, HTTP   SDN Lab

· Developed a routing controller in a Java module, which provides content-based routing for pub/sub service to minimize network traffic and reduce application filtering effort. The routing algorithm is based on sorting and merging interval of encoded IP-address
· Developed a "Subscriber" Java application which can subscribe to publishing service via REST API and receive UDP from publisher.
· Developed a one-to-many publishing service in Floodlight controller, which can receive subscription via HTTP request (GET, POST, and DELETE) and perform content-based routing in a OpenFlow network.

Dynamic Routing for Software-Defined Network Java, Dijkstra's algorithm   SDN Lab

· Developed a Java module in Floodlight controller, which provides 2 dynamic routing modes in OpenFlow network.
· Reactive mode routes with shortest path. Adaptive mode routes TCP flow with load balancing by querying network traffic statistics dynamically and matching IP addresses and TCP ports. The implementation is based on Dijkstra's algorithm.
· Verified application with Iperf in MiniNet on Linux and achieves 6x bandwidth increase (582kbs vs 3478kbs) in adaptive mode

Java Application for Wireless Ad-hoc Network Java, UDP, Raspberry Pi   Mobile Computing

· Developed 4 Java server and client applications which implement 2 protocols: Flooding and Dynamic Source Routing (DSR). Flooding achieves high robustness with UDP messages broadcast. DSR achieves reduced data transfer overhead with route discovery in control messages. Applications use DatagramSocket classes from java.net package for UDP transmission.
· Verified applications on Raspberry Pi with real mesh 802.11 WiFi network.

Android App for City Temperature with Google Firebase Java, Android   Mobile Computing

· Developed an Android application, which can update, subscribe, and calculate daily average of designated city temperature
· Implemented functions for accessing and querying data in JSON in a shared Realtime NoSQL database with Google Firebase API

ATP Tennis Player Network Analysis Python, Graph, NetworkX   Complex Network System

- Developed Python programs to generate complex network and derive structural insights such as Page Rank, Connectivity, Clustering, etc.
- Implemented algorithms with NetworkX package and built an undirected graph by processing real tennis match statics in csv format.
- Discovered, visualized, rendered and exported network topology with open-source software Gephi

Forest Cover Type Prediction – Python   Machine Learning

- Implemented *Decision Tree* and *Support Vector Machine* with *Scikits-Learn* package, evaluated and discussed the performance on forest type classification problem