Han Wu

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EDUCATION

Free University of Berlin — **Berlin, Germany**
PhD student of Computer Science — *Sep 2016 - Present*

Tongji University (Project 985) — **Shanghai, China**
Master of Software Engineering — *Sep 2013 - Mar 2016*

Huazhong University of Science and Technology (Project 985) — **Wuhan, China**
Bachelor of Civil Engineering — *Sep 2009 - June 2013*

KEY SKILLS

Programming Skills

- Linux OS, Python, JavaScript, Docker Technology, Apache Kafka

Mathematical Theory

- Probability Theory, Markov Chain, Stochastic Process, Queueing Theory, Machine Learning

Language Skills

- IELTS:6.5; German: B1.1

ACADEMIC PROJECTS

Performance and Reliability Analysis on Messaging Systems — *Sep 2016 - Present*

- Used machine learning model and queueing theory to evaluate the performance and reliability of distributed messaging systems. Built a Apache Kafka system on several machines and ran a series of experiments. Used queueing theory to evaluate the performance of Apache Kafka, including the throughput and latency. Created a Docker based Kafka testbed for running tests and collecting training data. Proposed a ANN based model which predicts the reliability of message delivery under unstable network condition.

TGIS based on SVG maps — *Sep 2013 - Mar 2016*

- The project is financially supported by The National Natural Science Foundation of China(NSFC). I conducted the development of map-edit module of Temporal Geographic Information System based on SVG maps. Defined the attributes of various elements in SVG maps. Produced a web tool for editing SVG maps and performed a dynamic map-loading model using Java and JavaScript. Contributed to both the development of map-query module and map-comparison module.

Volkswagen GIS — *Feb 2014 – May 2015*

- Investigated the requirements of Volkswagen Research Group China (VRC) for a map-query system and finished the requirements analysis documents. Developed a Geographic Information System based on the Google Maps API and Highmoral Maps API using JavaScript and Nodejs. The GIS which provides the staffs in VRC with functions of querying suppliers' and research institutes' locations and downloading relevant documents is now put into use in VRC.

EXPERIENCE

Tongji University — **Shanghai, China**
Teaching Assistant — *Mar 2014 - June 2015*

- Teaching Assistant for Software Testing, checked the homework and course projects of students, and help them with questions.
- Teaching Assistant for Software Engineering, help the teacher with presentation materials.

SAP Labs China **Shanghai, China**
Front End Developer *May 2015 - Aug 2015*

- Participated in the Rule Engine team of the Successfactors Core Framework Department as a Front End Developer. Fulfilled the tasks of building components which provide the ability to register, define, classify, and manage the business rules in a runtime production system. Contributed to the development of business rule management module of the Enterprise Resource Planning system using Jboss, JIRA, VersionOne and SVN.

PUBLICATIONS

- **Wu, H.**, Shang, Z., Wolter, K. (2020).A Reactive Batching Strategy of Apache Kafka for Reliable Stream Processing in Real-time *In 2020 IEEE International Symposium on Software Reliability Engineering (ISSRE)* (**Accepted, acceptance rate:25.7%**)
- **Wu, H.**, Shang, Z., Wolter, K. (2020, June). Learning to Reliably Deliver Streaming Data with Apache Kafka. In *2020 50th Annual IEEE/IFIP International Conference on Dependable Systems and Networks (DSN)* (pp. 564-571). IEEE. (**Acceptance rate:16.5%**)
- **Wu, H.** (2019, October). Research Proposal: Reliability Evaluation of the Apache Kafka Streaming System. In *2019 IEEE International Symposium on Software Reliability Engineering Workshops (ISSREW)* (pp. 112-113). IEEE.
- **Wu, H.**, Shang, Z., Wolter, K. (2019, October). TRAK: A Testing Tool for Studying the Reliability of Data Delivery in Apache Kafka. *In 2019 IEEE International Symposium on Software Reliability Engineering Workshops (ISSREW)* (pp. 394-397). IEEE.
- Shang, Z., **Wu, H.**, Peng, G., Wolter, K. (2019, October). Dynamic load balancing in the control plane of software-defined networks. In *2019 IEEE 19th International Conference on Communication Technology (ICCT)* (pp. 947-953). IEEE.
- **Wu, H.**, Shang, Z., Wolter, K. (2019, August). Performance Prediction for the Apache Kafka Messaging System. In *2019 IEEE 21st International Conference on High Performance Computing and Communications (HPCC)* (pp. 154-161). IEEE.
- Shang, Z., **Wu, H**., Wolter, K. (2019, June). Buffer management for reducing packet-in messages in openflow networks. In *2019 IEEE 11th International Conference on Communication Software and Networks (ICCSN)* (pp. 458-465). IEEE.
- Shang, Z., **Wu, H.**, & Wolter, K. (2019, March). Performance Evaluation of the Control Plane in Software Defined Networks. In Proceedings of the *12th EAI International Conference on Performance Evaluation Methodologies and Tools* (pp. 171-174). ACM.
- Shang, Z., **Wu, H.**, & Wolter, K. (2018, October). An OpenFlow Controller Performance Evaluation Tool. In *European Workshop on Performance Engineering* (pp. 235-249). Springer, Cham.

AWARDS

- Second Prize on the 11th National Post-Graduate Mathematic Contest in Modeling
- Learning Progress Scholarship at HUST
- Best Creativity Award on the 10th 'Feihang Cup' College Students' Science Festival, Contest of Campus Icon Design