Version 0.1.6

Xin Meng

Address: Bletchley Park Innovation Centre, Milton Keynes | MK3 6EB
Contact: +44 7463001807 Xin.Meng.1@city.ac.uk
Website: https://mengxin.science

Education

July 2017 Google Cloud OnBoard One Day Training, London
Google Cloud Platform
Learning the knowledge of Google Cloud Platform products such as Cloud Dataproc, Cloud Dataflow, BigQuery, Tensorflow and ML APIs.

Sept 2012 – Sept 2016 PhD researcher at City University, London
Mobile Security Research
Research on the mobile Botnet detection on Android platform. Became familiar with JAVA and Android development technique. Provided analysis of the traffic network pass through the mobile device by using machine learning classification. A mobile Botnet detection framework (MBotCS) is developed on the Android platform. The PhD Thesis *An Integrated Network-based Mobile Botnet detection System* can be accessed by http://openaccess.city.ac.uk/19840/

Sept 2010 – July 2012 Master of Science in Computer Application Technology,
Major: Cloud Computing, **University of Aeronautics and Astronautics**, Nanjing
Thesis: "Virtual Resource Management in Cloud" | Advisor: Prof. Yi Zhuang
Mark: 87.98/100
The postgraduate courses cover some advanced topics in computer science such as parallel and distributed system and advanced artificial intelligence.

Sept 2006 – July 2010 Undergraduate Degree in Computer Science and Technology
highest honour, **University of Aeronautics and Astronautics**, Nanjing
Thesis: "UCON Based FTP Access Monitoring System" | Advisor: Prof. Yi Zhuang
GPA: 4.0/5
The undergraduate courses cover all fundamental of computer science such as Data Structure (95/100), Operation System (94/100) and Database Principles (96/100) and so on.

Work Experience

Feb 2016 – Current Full Stack Developer at DeepnetSecurity , Milton Keynes
Development
Full stack developer for several projects related to unified authentication system: the Identity provider authentication server, Single sign-on system. The framework of the back-end is a light combination based on Jersey, Guice, Shiro and Swagger. I also familiar with the Angular 2+ for front-end development. Meanwhile, I also involved in a Xamarin mobile app project iClockIn which devote to simplify the attendance of business.

May 2014 – Feb 2016 Teaching Assistant at City University , London
Education
Provided teaching assistant for the undergraduate course including Mathematics for Computing, Computation and Reasoning and Object-Oriented Analysis and Design. Meanwhile, I got involved in the Second Maker for Individual Project. Gained experience in communication and logical thinking.

Sept 2015 – Nov 2015 Android Developer Intern at DeepnetSecurity, London
Development
Responsible for the Android application development of IDigiSign which is an electronic signature platform. Became familiar with how to develop Android applications with Restful API. Solved some technical problems such as showing PDF file, cropping photos to upload, loading network images and so on.

May 2013 – May 2015 Co-founder at IDAOYOO.com , London
Research & Development
Provided technical support, in particular, the software development for the company including the website(www.idaoyoo.com) and the applications on the iOS&Android platform. Became familiar with the web technology of PHP, HTML and CSS and mastered the mobile project design. Gained proficiency in the website hosted and maintenance technology.

May 2009 – May 2010 QA Intern at Trend Micro Developing Centre, Nanjing
Mobile Security Application Quality Assurance
Received offer from software development competition as a result of the very positive review. Rated "*truly distinctive*" for software testing skills and teamwork. Mastered the systematic software testing and the virtual machine technique for mobile application.

Technical Projects

Sept 2017 – Current | Single Sign-On Back-end Server, Milton Keynes
Leader

The Single Sign-On (SSO) Server is the core project in the current DualShield product family. This project is a new generation of the corresponding product. The major function of SSO server is handling the various single sign-on protocol, such as SAML, WS-Fed, OpenID and so on. During the development of this project, I have been familiar nearly all of the single sign-on related protocols. By researching the official standard documents of OASIS and Microsoft, my implementation for the protocol handlers conforms the specification strictly. I learn the OpenSAML Version 3 by reading its source code and make several extensions such as SOAP1.2 support and more flexible encoder. The other important feature of this project is supporting the real-time message publish and subscribe. After a comprehensive investigation of related technology such as Kafka, Pulsar, CouchDB, RethinkDB and Firebase, I finally decide to use the Firebase RealTime database to support the message exchange.

June 2016 – Apr 2018 | Cloud based DualShield Platform, Milton Keynes
Leader

This project is a cloud-based unified authentication platform which is the core product of the company in future. The platform is designed for providing a one-stop solution for the enterprise to protect their resource. According to the development of this project, I have learned huge of knowledge and practices the ability of software architecture. The project is based on a lightweight Restful API framework by combining Jersey, Guice, Shiro and Swagger. We take advantage of the flexible of this framework to implement a lot of advanced features. The Google Cloud Platform (GCloud) is chosen to host our project, so I have got proficiency with related products of GCloud such as DataStore, Standard Environment (App Engine), Compute Engine and so on. Apart from these mainstream development technology, this project also need to support some special feature, for example, the multiple factor authentication (HOTP/TOTP etc.), LDAP/AD operation, Certification related development.

Mar 2016 – June 2016 | iClockIn Xamarin Cross-Platform Application, London
Leader

Developing the cross-platform Xamarin App on the iOS&Android platform with the Grial UI Kit. Meanwhile, several platform dependent features implemented on the project by using Dependency Injection such as Geo-Fence and Network monitor. According to this project, I have mastered the solution of mobile cross-platform application development. With keeping an eye on the latest improvement of Xamarin, I also familiar the desktop cross-platform solution by using Xamarin such as Xamarin.Mac and Xamarin.WPF.

Sept 2012 – Feb 2016 | Mobile Botnet Detection System Research and Implementation, London
Leader

The main project for my PhD research. In order to realize the system to detect the mobile Botnet on Android platform, there is a lot of work during my research. Firstly, I in-depth studied the **knowledge of network** and I was familiar with the traffic monitor toolkit **"WireShark"**. In addition, I made some research for the "PCAP" format traffic file and used **"JNetPcap"** to implement the PCAP file parser by using **JAVA**. Secondly, I studied the Machine learning Classifications and became familiar with the open source machine learning toolkit **"WEKA"**. I used the toolkit to classify the traffic based on selected features. At last, I enhanced my **Android development skills** to implement the detection system on the Android platform which had been published on conference named "CRISIS2015". I also performed some experiments by analysing the traffic and system call on the mobile system. I had implemented some **Linux Shell Script** (which can be run on the Linux kernel of Android operation system) to capture the system call for the specific process.

May 2013 – Nov 2014 | IDAOYOO Website, London
Leader

I was the co-founder of the IDAOYOO.COM website and was responsible for all the technical problems. The IDAOYOO.COM website is a social network which can connect the Chinese tour guides and tourists. The website is based on the PHP and MySQL. I implemented the system based on open source project named ThinkSNS and developed some application on the platform. I was familiar with the **PHP, MySQL** and mastered the **website deployment techniques**.

June 2011 – Aug 2012 | Carrier-based Cluster System, Nanjing
Leader

The system is used for improving the robustness and effectiveness of computing task on the ship. I was responsible for the design of the system and the implementation of the **virtual storage management** component. The project is based on the embedded system(VxWorks). So we depended on **embedded c programming** to implement the system by using **Wind River Workbench**.

June 2011 – Aug 2011 | Competition: "HuaWei Cup" Computer programming contest, Nanjing
Leader

I chose the project of URL Matching Algorithm Research and Implementation. I developed a software which can match the specific URLs in the database base on given rules including some wild-card character. During the project, I used 3 core algorithms to satisfy the requirement of time&space complexity which include **KMP string searching algorithm**, **Deterministic finite automaton(DFA)** and **Rule-base classification**. At last I implemented the system based on **C#** using **Visual Studio 2005**. The project got the third prize of the competition.

Jan 2011 – May 2011 | Competition: Second Google Android Competition in China, Nanjing
Leader

I Organised a team to attend this competition, and we developed a Special Alarm on Android platform. The innovation of the application is introducing the social network thinking. We defined a universal format (**XML**) of the alarm and the user can share their alarms with their friend such as "Fitness Plan" and "When you need to brush your teeth". I was responsible for the design of the application and implementation of the XML file store and parse on **Android development**. I was even in charge of the **UI design** with my skilled **Photoshop** knowledge. The project got the "Excellence awards in Google Android Competition in East China"

June 2010 | The Simulation Software for Collaborative Against, Nanjing
Oct 2010 | *Participant*

I was responsible for a small part of the project which is the visualisation of the performance of the units. I became familiar with the **drawing with MFC** and implementation of a display which is similar to the Performance of Task Manager on Windows.

May 2009 | TMMS (Trend Micro Mobile Security) Mobile Application, Nanjing
May 2010 | *QA intern*

The TMMS is one of famous mobile anti-malware application. What I have done for the project is software testing for the TMMS on Windows Mobile and Symbian Operation System. Through the project, I became familiar with the **Software Testing engineering** and I also learnt to use **the tracking system for software development projects** such as "Trac" and the virtual machine tools such as "VMWare Workstation".

Key Transferable Skills

Problem Solving: In current work, I usually take part in the solution exploration and architecture research to meet the requirement of projects. To achieve the target of my PhD project, I had to solve a series of problems including how to distinguish the malware and normal applications and which features could be used for detection. According to a lot of experiments, I found that it is feasible to detect the malware by analysing some specific features of traffic.

Learning Capability: In current work, I learn lots of domain knowledge such as the various standard security protocol and new technology by myself to achieve the special requirement. Meanwhile, I can also apply this knowledge to the development of the project. During the period of PhD, I learnt a lot of knowledge by myself for the research. Such as learning Linux shell script to monitor system calls on the Android platform and learning VBA script to analyse huge data automatically. I am good at studying and taking advantage of the new technology and existing toolkit. Such as to implement analysis of PCAP file, I made use of JNetPcap, which is a powerful open-source Java library for network analysis. I also learnt the LaTeX to write my publication, thesis and this CV.

Data Analysis: Machine Learning and statistic analysis play an important role in my PhD research. These techniques are essential for data analysis. Such as I used the machine learning classification to analyse the traffic data on the mobile device to find the distinction between normal and abnormal. I also performed T-Test and ANOVA to analyse the differences among different groups data.

Professional Skills

Basic Knowledge: python, mysql
Intermediate Knowledge: Html, C, C++, CSS, Linux, Kafka, Zookeeper, LaTeX, MS Office, Adobe Photoshop
Advance Knowledge: JAVA, Xamarin, Angular, Docker, Git, Swagger, VBA, PHP, Machine Learning

Scholarships and Certificates

Sep. 2012 Full Scholarship for PhD students from City University (£50,400)
Oct. 2011 Excellence awards in Google Android Competition in East China
Jul. 2009 Awarded China National Motivational Scholarships(¥6,000)
Jul. 2008 Awarded China National Scholarship (¥8,000)
Nov. 2012 IELTS©: 6.5 (Listening:7.5;Reading:7.0;Writing:5.5;Speaking:6.0)

Publication

July 2015 MBotCS: A mobile Botnet detection system based on machine learning
10th International Conference on Risks and Security of Internet and Systems

April 2018 An Integrated Network-based Mobile Botnet Detection System
Doctoral thesis, City, University of London

Languages

Chinese: Mothertongue
English: Fluent
French: Basic Knowledge

Version 0.1.6

Interests and Activities

Novel Technology, Open-Source, Programming
Reading, Magic Cube, Guitar
Cycling, Football, Travelling