**Sheng Lu**

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github: <https://github.com/thinksource>

**EXPERIENCE SUMMARY:**

* Experience many years in web development, that is including the front-end development and back-end development
* Front end experience with **JavaScript (jQuery, React), CSS**, **HTML** and **HTML5**
* **Python** experience with **Numpy, Scipy, Pandas, sklearn and so on**.
* Experience web development with many MVC frameworks like **Django, Flask,** Spring and so on.
* Expertise in **SQL**(such as **PostgreSQL**, MySQL, MsSQL and Oracle) and NoSQL(such as MongoDB and Redis) database query and manipulation
* Experience working on Amazon cloud (**AWS**), **s3,** **EC2 and lambda** (using Bash shell and commands)
* Excellent communication & interpersonal skills, able to work both in teams and individually.
* Knowledge and experience with **Android (mobile)** development with (ADT).
* Stronger **Linux** skill and familiar with bash and reconfigured some network services including **firewalls, DNS** and **proxies**. (Although I am a developer, nearly all my code is running or can run on Linux platform.)

**TECHNICAL SKILLS:**

|  |  |
| --- | --- |
| **Languages:** | C/C++, Java, **JavaScript**, **TypeScript**, **python**, php, .Net, Scala**,** R, C# |
| **Java / J2EE:** | J2EE, EJB, JDBC, JSP 2.0, Spring 3, SpringMVC, Struct2 JSTL, OSGI, JavaScript, GWT, JMS, SOA EJB |
| **Web Technologies:** | **HTML5, DHTML, XML, CSS. WSDL, SOAP, REST** |
| **Web server :** | WSGI , nginx, apache, Tomcat, Jboss, WildFly, |
| **JScript Framework** | jQuery, Backbone.js Underscore.js, Coffeescript, Angular2JS, AngularJS, RequireJS, **Node.js** React.js |
| **Bigdata:** | **Spark**, Kafka |
| **NoSQL:** | Mongodb, Cassandra, Redis, GraphQL |
| **RDBMS:** | **Oracle, MS Access, MySQL 5.1, MS SQL Server, PostgreSQL** |
| **Machine learning libs:** | Numpy, scipy, pandas, Tensorflow, matplotlib |
| **OS:** | Windows10, **Linux(Ubuntu, Fedora, Debian, Centos)** |
| Cloud Technology: | AWS Lambda, EC2, S3, cloudfront, Route53, DynamoDB, Cloudframation, ElastiCache, SNS/SQS, ElasticSearch, dcoker, kubernates |
| **IDE Tools:** | Eclipse, Visual studio, Netbean, IntelliJ, Atom, |
| **Application Frameworks:** | Spring, playframework, Django, Zendframework, Express, |
| **Testing Tools:** | JUnit. Java plugin test, Jira |
| **Project Tools:** | Git, SVN, JIRA, Bamboo, Confluence, |
| **CI/CD Tools:** | Circle CI, Travis, AWS CodePipeline, Jenkins, Terraform |
| **3D programing:** | OpenGL, GLSL and SDL |
| **Virtual tools:** | VMware, virtualbox, docker, Kubernetes(K8s) |

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**EDUCATION:**

2009-2010,

**M.Sc. in Computer Science**

University of Adelaide.

2001-2005

**Bachelor Degree in Computer Science**

Beijing information technology University

Online courses:

[Functional Programming Principles in Scala](https://drive.google.com/file/d/0B9ncCBd_xIXqTDdIeVo2VXhxSzQ/edit?usp=sharing)

[Principles of Reactive Programming](https://drive.google.com/file/d/0B9ncCBd_xIXqUlZzVnJlSVY2QVk/edit?usp=sharing) (also a Scala course)

[Cryptography I](https://drive.google.com/file/d/0B9ncCBd_xIXqZDVWbFJiRjRhcXc/edit?usp=sharing)(with python as coding tools)

[**Machine Learning**](https://drive.google.com/file/d/0B9ncCBd_xIXqOHo1Tzd5S3JmcVE/view?usp=sharing) (Stanford Andrew Ng)

**Neral Networks and Deep Learning (Andrew Ng at 163.com)**

**Mining Massive Datasets**

**EMPLOYMENT HISTORY**

### Infosys July 22 - Now

**Senior Software Engineer**

**Responsibilities:**

* In charge to develop front-end of an Authority system base on Session and Cookie
* Using **Spring boot** to develop API controls base on J2ee(**java**)
* Using **Spring Data(JPA) and Hibernate** to develop system persist and Data Repository.
* Development the merge contract, contract update service
* Development the test cases via **Junit**
* Configure the **Log4j** log system for Unit Testing
* Development the log and profile System for pressure testing via **AspectJ**

Technologies:

Tomcat, Jboss, Oracle, Servlets, Spring-boot, Spring, maven, Log4j, JPA, Junit, Hibernate, Oracle, AspectJ, Node, JavaScript, React.js, Material-UI

### NSW Police Nov 21- June 22

**Senior Software Engineer**

**Responsibilities:**

* In charge to develop front-end & back-end of Finger-Print System
* Using **Spring boot** to develop API controls base on J2ee(**java**)
* Using **Spring Data(JPA) and Hibernate** to develop system persist and Data Repository.
* Development some frontend, web components via **Angular 9** and **TypeScript**
* Using **RXJS** library deal with asynchronous pipe line file transport
* Using Material-UI components and customer **scss** to develop
* Using Bitbucket, git to management the data source.
* Designing data model and implement with Eclipse

Technologies:

Tomcat, Jboss, Ms-sql, Servlets, Spring-boot, Spring, maven, JPA, Junit, Hibernate, Node, JavaScript, Angular6, rxjs, TypeScript, Material-UI, Scss,

### Optus Jan 21- Nov 21

**Senior Software Engineer**

**Responsibilities:**

* In charge to develop front-end part of Telephone number management System
* Using **SqlAlchemy ORM** to manage the model and mapping
* Using **OpenShift, Docker** to build pipeline and management the docker containers.
* Using **python** **Flask** and **Flask-appbuilder** to build website including **RestAPIs**
* Development the **PostgreSQL** database store procedure and triggers.
* Development some web components via **JavaScript**
* Using Microservice to organize and develop APIs
* Using JIRA and Confluence to management to issues and release time.

Technoloies:

Docker, Kubernetes, python, SqlAlchemy, OpenShift, RestAPIs, Flask, Postgresql, JavaScript, Jquery, JIRA, PyUnit, Html, Jenkins

### Macquarie University Jun 20 – Dec 20

**Senior Software Engineer**

In charge of several products’ services research projects.

**Responsibilities:**

* Management the production and development AWS cloud accounts and service.
* Development some survey services for medicate research and application
* In charge to develop sensors project.
* In charge to develop project with **TypeScript, React** to develop frontend component
* In charge to develop blue tooth sensor project with c++ and **node.js**
* Using **AWS lambda and step functions** to build APIs Services.
* Development the test suits via Chai and Mocha
* Development the **PostgreSQL** database query and manipulation
* Using vue3.0 develop a Questionnaire system
* Change some service build by Spring Framework.
* Using Shell scripting and node-RED to build pipeline.

Technologies:

AWS cloud, Serverless, EC2, S3, RDM, ECS, EKS, TypeScript, React.js, JavaScript, Node.js, Java, Spring-boot, Python, IOT, C++, PostgreSQL, Vue.js, Linux, Raspberry Pi, Express.js, Jenkins

### Land and Property Information of NSW (CadastreNSW project) Oct 18 - Nov 19

**Senior Developer**

This project is build Spatial Web Services on AWS cloud via AWS cloud formation.

**Responsibilities:**

* Divided the whole AWS cloud formation document into several part as service and nested stacks.
* Rebuild the dev nested stacks pipeline via ruby and some aws libs like cfndsl with **Cloudformation**, aws-sdk.(using lot of AWS service including **AWS EC2, S3, DNS/Toute53, DynamoDB, ElasticSearch, SNS/SQS, API Gateway, Step functions**)
* Applying **serverless framework** with **AWS lambda**
* Rewrite makefile, rakefile and dockerfile to make sure it works in nested stack pipelines
* Add additional function for bundle-management and asset-management using both **node.js** and **python with boto3**.
* Developed data pipeline for Integration of different data sources such as different Files types
* Building and using Elastic search service as search engine.
* Using Postgres/PostGIS database
* Using git and **bitbucket** to management the code source
* Writing Unit test case by **Chai** and development mock function of DynamoDB.
* Using Microservice to organize and develop APIs
* Using Serviceless to develop Services.

Technologies:

AWS, CloudFormation, EC2, ECS, S3, DynamoDB, RDS, SNS, SQS, AWS lambda, Python, boto3, PostgreSQL, PostGIS, Node.js. Docker, EKS, AWS codePipeline

### Woolworths (SOC project) Jan 18 - Aug 18

**Application Developer**

This project for the security department, Building online tools for woolworths security team in order to detective the potential threat from outside website or ip address.

**Responsibilities:**

* Using **Flask (python3)** combine with lots of flask plugins like Flask-restful, flask-security development the APIs part of the project
* Using **vue.js(modern JavaScript framework)** combine with **vue-router, vuex** and **webpack3 (Node.js)** developed the front-end management system.
* Development many **vue 2.0** components of front-end.
* Using **PostgreSQL** development the database.
* Combine **SQLAlchemy**, alembic Flask-Script and Flask-Migrate develop CI & CD part of the project make the project easy to build and database easy to migrate.
* Writing build and testing script to drive the build and testing action.
* Using **Karma** and Mocha (**Node.js**) develop JavaScript Unit test cases.
* Using **Less** as the CSS Styles
* Applying **Travis** as CI/CD test pipeline.

**Environment:**

vue.js, flask, node.js, **PostgreSQL,** SQLAlchemy, python, karma, mocha

### Thred Oct 17 – Dec 17

**Backend Developer**

Build the sweep.im backend conmunation apisandcontrols. For me, in charge to build the core communication of mobiles and their servers.

**Responsibilities:**

* Research and Development web-socket communication demo by **python** and **tornado** to test the technical execute possibility.
* Doing pressure **load testing** of **websocket** communication by loust framework and writing report
* Management and build sql database(**PostgreSQL)** and nosql database **ElasticCache** (**redis**) on AWS EC2 servers
* Development similar **message broker** server by **websocket** and Kafka.
* Development multi-threads backend message management service.
* Applying **coroutines** replace **threads** to listening on message.
* Generation the new Sweep website by cookiecutter
* Redevelopment the **Sweep** website by **Flask** frameworks, **JinJa2** templates **JQuery** and the **Google map apis**.
* Development testing cases by **pytest**
* Using AWS Elastic Load Balancing to do the **load balance** of website.
* Using Microservice to organize and develop APIs

**Environment:**

python, flask, websocket, **PostgreSQL**, Kafka, elasticCache, AWS, coroutine

### Card Access Service July 16 – Aug 17

Online Payment solution for small or medium companies, this project for upgrade the previous solution and merge another mobile payment solution paymate and rebuild some modules of them.

**Scala Developer**

**Responsibilities:**

* Development Fraud check APIs (**JSON+REST**) module by **Scala (Functional Programming), Scalaz** via http4s framework
* Development SSL downgrade module and reconfiguration the java security.
* Make a unit Test and behave Test of Fraud Check via **karma.** (N**ode.js**)
* Management the Test container. (Docker)
* Using the Atlassian Confluence to update the documents and module instructions.
* Upgrading the previous Jboss 7.0 website to WildFly.
* Development and edit store process of **PostgreSQL**
* Do code review of other module like MDS
* Using **Kafka** and Spark as message broker to transmit internal message
* Using **jQuery** to fetch DOM objects, and jQuery plugins to do inputs checks.
* Using **Angular2(and then change to Augular 4)** redevelopment some of the account management module. Also using **typescript**

**Environment:**

java, scala, **PostgreSQL**, jboss, **Angular2**, Typescript, Kafka, springboot, wildfly, zookeeper

### Ao3- Sydney Nov 14 – May 16

**Administrator/developer/** **Architecture**

working as administratorof ao3.com website, in the meantime, I also have to devote lots of time to development the new website, tools and some of their management system.

**Responsibilities:**

* Management several servers some of them are Linux (**Ubuntu** 14.04& **Centos** 7.0) others are windows 2008 server.
* Management the VMware ESX (vitualization operating system) and the virtualization system on it.
* Management the MySQL, MariaDB & **PostgreSQL** databases
* Debug & Support the old PHP & ASP.NET websites with (**C# as backend script language**).
* Constructed, designed&Build the new website, using bower+**gulp** as build tools and package management, using **Node.js, sequelize, express, socket.io**, elastic search as server side, using karma and jasmine as testing tools & framework, using Angularjs, angularjs-UI and some sass and bootstrap templates as from end. (REST website)
* Build Haproxy reverse proxy server and do load balance.
* Build soft router on Ubuntu Linux and configure it.
* Maintain the jobscheduler (**java** task schedule server) to do data-loading in regular time
* Maintain and continue development the data-loading process(transfer the data format from the supplier format to our database format)
* Maintain the bug report system Bugzilla.
* Internal **network, computer, router, servers** and **database management**
* Fixed and rewrite part of the data wrangling system(ORM with **SQLAlchemy**) and web spider by **python.(Automated deployment script)**
* Maintain and troubleshoot several Apache servers.
* Maintain the email system exchange.
* Configure and install firewall & configure **DNS, Firewall** of gateway service.
* **Build the Cloud environment on AWS (Some lambda for automatic process)**
* Maintain the Active Directory for users and Computers. (login and Authorities )
* Troubles shooting some system problems
* Designing the new the SQL database
* Developing **React components** for Dashboard of management system.
* Using ElasticSearch services work as search engine
* Using **React.js** and **webpack** develop the picture gallery management System.

**Environment:**

windows, linux, python, Node, **PostgreSQL,** react.js, .net, mysql, aws. ElasticSearch, Spark

### Propertymode- Sydney Oct 13 – Jun 14

Python (Django) Developer

**Rwanda web Tax System**

An tax system for an Africa country.

**Propertymode (Sourroundpix)**

**Responsibilities:**

* Continue to develop the report modules **python** (**Django)** website.
* Continue to develop the report modules **python** (**Django)** website Develop the new static module for calculation and comparing the tax (**jQuery.flot**)
* Develop the new report module for print (including the **Openlayers map** print )
* Develop **Openlayers** JavaScript usage part of boundary and position the properties on map
* Write the release report and package and update the release version
* Write some tables, graphs and maps format presenting data
* Manage the test server (Ubuntu with **PostgreSQL database**)
* In charge of change some of surroundpix min change like block the map it shows
* Using **Mongodb** to mountain the log of website.
* Debugging and maintain site written by Yii2

**Environment**

python, Django, **PostgreSQL**, eclipse, Linux, Openlayer

### Acnw Times Group - Sydney April 13 - July 13

Python (Django) Developer

**ACNW websites**

Several websites development

**Responsibilities:**

* Continue to develop their web-site utilising **python (Django),** and complete page templates.
* Development with the JavaScript version of YouTube authority, listing and playing with YouTube V3 API.
* Developing JSON request (JSON RPC) with YouTube V3 API.
* Developing with some **Django** plug-ins such as photologue, **Django** pagination and tags.
* Developing front-end by JavaScript, jQuery, jQueryUI, with many other jQuery plug-ins and CSS.
* Management of Linux server (CentOS) via Bash Shell (I am the development server administrator).
* Designing and applying the JSON RPC by **python**-Json-RPC.
* Developing some tables, graphics and maps formatting of data presentation.
* Applying hg (Mercurial ) as SCM.

### IExtend - Sydney Aug 12 - Feb 13

**Front-End Developer**

**Ixsystems**

This is a business information management system with production presentations, a shopping cart, marketplace and so on. It has market leading capabilities of the iMIS software product and provides new opportunities within the Corporate marketplace with a suite of products that can interface into any SQL database or stand-alone system.

**Responsibilities:**

* Beans, **Spring** and **SpringMVC** controller designing and implementing with eclipse and JBoss tools plugin.
* JavaScript code of media management and Ajax form data generation.
* Develop JSTL as View presentation.
* Used maven3 to resolve the jar package dependence.
* Developing **Underscore.js** and  **Angular.js** JavaScript application pages.(**Using Node.js** hope to build the development environments)
* Adjust the production to right presentation on different browsers with JavaScript, CSS and ActiveX. (internet explorer 8, 9, 10, Firefox, Google chrome)
* Add the local media and data with no security.
* Build **RESTful** web services for pictures on **Spring 4 REST**
* Remote control server on SSH and SCP.
* Developing on  **JBoss** 7 community.
* Responsible for creating and executing test cases for the Web using **JUnit** test.
* Using **Jira** as issue tracking.

**Environment**

java, jboss, spring, spring-mvc, spring boot, angular

### MICOB – Sydney Dec 11 - July 12

Java Developer

**Ardor Content Generation**

Quality content is a major factor in Search Engine Optimization. This project is a service for SEO, it will automatically search the web pages from the servers with the key words that the customers registered every day. It fetches the results of the search Engine and records on the Database and then uses the GWT applying Velocity (template engine) to Optimize the content of customer’s web site. The project is applied with OSGI Framework to provide the extensibility, flexibility, scalability, redundancy, clustering and performance.

**Responsibilities:**

* Involved in the database designing, creating parts of ER mapping, index and relationship of the table.
* Since this project has thousands of keywords and the proposal is to have hundreds of web site customization, this project has a huge database. I do profiling and the MySQL, find the bottleneck of the database and also optimizing the database. (**Performance tuning test**)
* Developed **Equinox OSGi** module, configuration, and wrote the dependence and Interface.
* Developed Google, Bing, Yahoo search Result analysis module, via j**soup**
* Developed Google API and the Google block the search engine, make the search engine automatically change.
* Responsible for creating and executing test cases for the Web tier using **JUnit Plugin-in test.**
* Used **SVN** combine with SVNkit as the Version Control System.
* Developed **JPA** module of this project via eclipse-link (**JPA 2.0**).
* UsedEclEmma to report the test code coverage for Junit test.
* Develop the ardor client modular via GWT and GXT.
* Utilized **Velocity tag libraries** in the presentation template.
* Used **Quartz** for scheduling jobs, I also developed the scheduling module.
* This team is applying the **Scrum** (Agile) method to develop the modular project, we have scrum meetings and I also wrote scrum reports.
* Applying **JMock** mock the context object for **JUnit** Plug-in test
* Applying Test-driven development (TDD) during development.

**Environment**

**Java, J2EE**, Eclipse, JUnit4, Equinox OSGi, eclipselink, JSON, JPA2.0, GWT, GXT, jsoup, MySLQ, Log4j, Velocity, Jetty, Google API, code coverage, Scrum, JMock, SOA, TDD

### SMEOI Oct 11 - Feb 12

PHP Programmer

**SMEOI B2B System:**

This project is to build a B2B shopping system to focus on export and import areas of service for small and medium companies. The company can open their shop on our website with a sub domain. This project is based on PHP and Zend Framework, and the front part is based on ext-js 4.0 library.

**Responsibilities**

* Involved in the development of new UI features, updates for every release in addition to incident log tracking and fixing for supported releases.
* Involved in a team responsible for design and analysis of the Software Development Life Cycle (SDLC) methodologies such as RUP.
* Gathered and analyzed user requirements and translated them into system solutions using **UML**
* Created **Use Case diagrams, Activity diagrams, Class diagrams, Sequence diagrams** etc. Using MS Visio.
* Build the running environments on **Amazon Cloudy (EC2)**, with amazon stand Linux system, such as building the SVN service on **EC2 and S3**.
* Management the **MySQL** server, which includes configuration and writing auto executive shell for the database.
* Developed web pages using **PHP** and JavaScript (base on **extjs4** library).
* Created a single **Cascading Style Sheet** for the common style of the PHP pages.
* Executed validations using the **Zend Framework.**
* Used **SVN** as the Version Control System.
* Used NetBean as the development platform.
* Applying Module-View-Control system on Zend Framwork and JavaScript
* Applying **JSON** object as transform the Asynchronous data.
* Designing and coding the database, including store procedures.
* Developing many modules for this project such as shop managements, advertising publishing subsystem.

**Environment**

NetBean, php, MySQL, Extjs, JSON, Zend Framework, EC2, Amazon cloudy, CSS, JavaScript, jQuery.

### Long IT Solutions June 11 - Oct 11

Website Programmer

During this period, I developed several websites based on the customer requirements, which is based on PHP, WordPress and Drupal technologies.

**Responsibilities**

* Involved in the development of the new **UI** for multiple projects
* Advanced **JavaScript**, **DHTML**, and **AJAX** using the **jQuery** JavaScript framework.
* Developed different modules on [www.ausamigration.com.au/en/](http://www.ausamigration.com.au/en/) including some plugin for this site.
* Design, develop and maintain several web sites including brochure-like sites, product databases, web-based applications and e-commerce solutions for a wide variety of clients. Web sites are hand-coded in **PHP**, **HTML** and **CSS** to **W3C** standards as well as web accessibility and usability guidelines and best practices.
* Designed and implemented the common news published module which uses different themes and can be modeled to perform differently in the data layer [www.ausamigration.com.au/en/](http://www.ausamigration.com.au/en/) using multiple PHP and JavaScript.
* Used Git as version control throughout the project.

**Environment**

PHP, Git, javascript, Git, jQuery, WordPress and Drupal, HTML, CSS,

### Adelaide University Research Project – Adelaide Jan 10 - Dec 10

Research Developer

This project is my research subject, which is to use genetic programming to make computers automatically generate corrected code with some schema, deeply view the evolution system to make sure the computer gives the rate of progressing on evolution. Eventually, the computer can solve the problem through this evolutionary algorithm.

**Responsibilities**

* Algorithm designing and executing, I used methods like ANN (Artificial neural network) with Back propagation to develop the test and select method of the genetic programming generated code.
* Use **Numpy, Scipy and Pandas** to write the script with execution.
* Use **SWIG** to make the interface of GAlib, GPC++ and then invoke them by utilizing **python.**
* Applying Mathplotlib to generate the pictures and diagram.
* Applying SVN as version control.
* Applying the AST translation schema and programming language
* Write example **C++ (g++)** case and test codes.

**Environment**

Python, SWIG, Numpy, Scipy, Mathplotlib, C++

### Long distance education school of Peking University Jan 06 - Dec 08

J2EE Developer

The purpose of the project was to develop a Long distance Educational System for students, teachers and other staff for the school. The system consists of enrollment, examination, course selection, education plan selection, homework and many others. The development was under Java, Servlets, and Hibernate, using **MS SQL**. The user interactive module was created in HTML, JSPs and Data query was through Hibernate and Servlets. The coding, testing and development were carried out using Eclipse IDE. This project is based on Spring Framework.

**Environment:**

**Java, HTML**, Spring, MS SQL, JDBC, Servlets, Hibernate, JSP, Ant, JDBC, XML, **SQL**. CVS. SOAP EJB

### ECT July 05 - Dec 05

**Visual C++ Developer**

This project is secondary develop of Auto-CAD and Micro-station on Personal Computer for electronic designing. This program is made for the easily draw of the electronic diagram. The program can change the schematic circuits to connection diagram and versus vice.

**Environment:**

C++, visual studio 2005, COM, visual Source Safe, Hook, RUNTIME library

**REFERENCES**

Available upon request..