

# Chenguang Liu *PhD student*

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## Education

The University of Texas at Austin

AUSTIN, TEXAS

**PhD Student in Software Engineering**

2014 – Present

Advisor: [Christine Julien](#), Area: Mobile & Pervasive Computing

GPA: 3.92/4.0

Courses taken: Engineering Programming Languages(C++), Advanced Programming Tools(Web/Mobile), Computer Architecture, Software Evolution, Software Testing, Distributed Systems, Programming with Molecules, Communication Complexity ...

Peking University

BEIJING, CHINA

**M.E. in Software Engineering**

2011 – 2014

Advisor: [Huiping Lin](#), Area: Context-aware Systems

Courses taken: Advanced Operating System, Middleware, Design Patterns, Algorithm Analysis ...

Research projects: Remote healthcare system, context-aware service recommendation.

Received the Distinguished Master's Thesis Award.

Beijing Jiaotong University

BEIJING, CHINA

**B.E. in Software Engineering**

2007 – 2011

Courses taken: Programming Languages(Java, C/C++), Data Structure, Computer Network ...

## Publication

1. Christine Julien, Chenguang Liu, Amy Murphy, and Gian Pietro Picco. Blend: Practical continuous neighbor discovery for bluetooth low energy. In *Proceedings of the 16th International Conference on Information Processing in Sensor Networks (IPSN)*, pages 105–116. ACM, 2017
2. Chenguang Liu and Christine Julien. Pervasive context sharing in magpie: Adaptive trust-based privacy protection. In *Proceedings of the 7th EAI International Conference on Mobile Computing, Applications, and Services*, pages 122–139. Springer, 2015
3. Chenguang Liu, Huiping Lin, and Yibing Xiong. A web service recommendation approach based on situation awareness. In *Services Computing (SCC), 2013 IEEE International Conference on*, pages 432–437. IEEE, 2013

## Project Experience\*

Automatic Bazel Migration

Course Work (Software Evolution)

Developed a migration tool that automatically translates the build system of a software project from Apache Maven to Google's Bazel.

Tested our tool with 15 open source projects to show the merits of migration automation.

(Language used: Bash and Python. Env.: Emacs)

BLEnd: Practical Continuous Neighbor Discovery for Bluetooth Low Energy

Research work

Found an affordable way for the energy-constrained devices to identify "who is around" continuously. The discovery protocol proposed is tailored to BLE's specs and is able to compute the optimal configuration (maximized lifetime) with a desired target latency and packet collisions taking into account.

Besides the comparison simulation (written in R), I implemented the proposed system on the Texas Instruments' SensorTags(CC2650STK) for a real world evaluation. This work will appear in IPSN'17.

(Language used: C and R. Env.: TI-RTOS, CCSv6)

MAGPIE: Adaptive trust-based privacy protection in context sharing

Research work

Provided a privacy preserving system for mobile users to exploit the nearby cyber physical environment and sharing sensing capabilities.

The system proposed is aim to mitigate the privacy concerns by providing an alternative to the all-or-nothing sharing strategies, and by disclosing an obfuscated version of the context information according to how trustworthy the receiver is.

The effectiveness of the method is evaluated by a set of application-oriented experiments on the opportunistic network simulator(ONE). The result is in the MobiCASE paper.

(Language used: Java. Env.: Eclipse)

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\* Selected

C++ STL and template metaprogramming Course Work (Engr. Programming Languages)  
Implemented a Vector template class similar to `std::vector`.  
Designed an event-driven simulator of life forms to simulate moving, hunting, spawning and collision using concepts in OOP.  
Implemented a Valarray template class using the concept of proxies and SFINAE to perform computation at compile-time and to reduce run-time overhead.  
(Language used: C++. Env.: g++)

Situation-aware web service recommendation Research work  
Explored to use situational information (e.g. activity, environment) to recommend services with better satisfaction of the user's functional requirement, meanwhile improve the QoS prediction accuracy.  
Conducted experiments based on the self-collected data and an open source large-scale dataset.  
(Language used: Java, Matlab. Env.: Eclipse)

Mobile apps Misc.  
Developed some iOS/Android applications during spare time. Below are two examples:  
*TOEFL Assistant*: this app was developed to help a friend to better prepare for the TOEFL speaking section and vocabulary building. I implemented some interesting features like button-free.  
*Expense Splitter*: this app aims to help people who live together to split their bills(e.g. utility) and living expenses (grocery/commodity costs) evenly and wisely. It also provides task planning and spending analyzer tools to ease the burden of managing shared expenses.  
(Language used: ObjC, Java. Env.: XCode, Android Studio)

## Internship Experience\*

Google Inc. Mountain View, California  
**Software Engineering Intern** *May '17 – Aug '17*  
Interned in the Gmail Ads infrastructure team. Implemented a logging pipeline in the Adserver. Using this new data source, I established a scoring feature based iterative training system to rank the promotional emails in the promo tab.

IBM - The China Systems and Technology Lab Beijing, China ([ibm.com/cdl](http://ibm.com/cdl))  
**Software Engineering Intern** *Aug '11 – Nov '11*  
Interned in the zOS management facilities group. Contributed to develop the web version of management facilities for the Z-series mainframes, later participated in integration testing.

Ericsson Beijing, China ([ericsson.com/cn](http://ericsson.com/cn))  
**Software Engineering Intern** *Mar '11 – Aug '11*  
Developed the Margin Analysis System which aims to promptly evaluate the potential defects of developing radio base stations.

Institute of Automation, Chinese Academy of Science Beijing, China ([ia.cas.cn](http://ia.cas.cn))  
**Software Engineering Intern** *Aug '10 – Nov '10*  
Worked on a research project focuses on monitoring physical states (i.e. heart rate) of patients in a rehab remotely. Implemented the database interface and built a Zigbee prototype.

## Teaching Experience(TA)

EE382V-Advanced Programming Tools Instructor: Christine Julien  
*Fall 2017, UTAustin*

EE382V-Mobile Computing Instructor: Christine Julien  
*Fall 2016, UTAustin*

EE461L-Software Engineering and Design Laboratory Instructor: Christine Julien, Meiru Che  
*Spring 2015, Fall 2015, UTAustin*

0DG02-Integrated Enterprise Management Systems Instructor: Andreas Nunnemann(SAP)  
*Spring 2013, Peking Univ.*

0C101-Software Component and Middleware Instructor: Huiping Lin  
*Fall 2012, Spring 2012, Peking Univ.*

## Skills

**Programming languages:** Love C++ and Java. Proficient in C/Bash/Go/ObjC/Python.  
**Tools/Platforms:** Linux, Emacs, Eclipse, Android Studio, Code Composer Studio, IntelliJ, Visual Studio, XCode,  $\LaTeX$