

Hojun Jaygarl

HOJUN JAYGARL

- Office: 226 Atanasoff Hall, Iowa State University, Ames, IA 50011 USA
- Office: (515) 294-4998 - JAYGARL@IASTATE.EDU - Cell: (515) 676-0114

RESEARCH INTERESTS

My core research area is Software Engineering, focusing on Automated Test input Generation for object-oriented programs, Adaptive Random Testing, Model-based random Testing, and Mining Software Repository. I am working on identifying faults in program development or in deployed programs by generating test cases, mining software repositories and analyzing software.

EDUCATION

- Ph.D. Candidate (all but dissertation) in Computer Science

Iowa State University Science & Technology	Aug. 2006 -	Ames, IA, USA
Advisor: Professor Carl K. Chang		
- B.S. in Computer Science

KookMin University	Aug. 2003	Seoul, Korea
Scholarship: 2 semesters		

ACADEMIC EXPERIENCE

- Instructor
 - Undergraduate course of “Applied Computer Programming, COM S 107”, Iowa State University
 - Fall semester 2008,
 - Spring, summer and fall semester 2009
 - Spring, fall semester 2010
 - Total: 6 semesters
- Teaching Assistant
 - Designing CS107/CS108 (Applied Computer Programming I & II) course, Jan. 2008 - Aug. 2008
 - Supporting Smart Home Laboratory in Computer Science Department of Iowa State University, Aug. 2006 - May. 2007
- Research Assistant
 - Student Internship at Hong Kong University of Science and Technology (HKUST), Jul. - Aug. 2009.
 - Summer Research Assistant for Prof. Tien Nguyen, Iowa State University, May. - Aug. 2007
- Student Volunteer
 - COMPSAC 2010, the 34rd Annual IEEE International Computer Software and Applications Conference
 - COMPSAC 2009, the 33rd Annual IEEE International Computer Software and Applications Conference
 - COMPSAC 2008, the 32nd Annual IEEE International Computer Software and Applications Conference
 - ICOST 2008, the 2008 International Conference on Smart homes and health Telematics
 - useR! 2007, the R user International Statistic Conference, Iowa State University
- Paper Reviewer

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- International symposium on Empirical Software Engineering and Measurement (ESEM) 2010
- Annual IEEE International Computer Software and Applications Conference (COMPSAC) 2010
- Journal of Systems and Software (JSS), Elsevier, 2009
- Testing: Academic and Industrial Conference (TAIC) 2009

WORK EXPERIENCE

Eight years of experience as a software engineer and programmer working in a variety of areas in the IT field, including embedded system programming, Network programming, Windows Applications, the Internet and Web and System Integrated programming. Working as an engineer at Samsung Electronics R&D Lab. Developing new products with advanced future technology such as a RFID refrigerator, a new UI refrigerator and washing machine, and developing system-software for Digital Appliance products such as Operating Systems, Device Drivers, Firmware, User Interfaces and Applications in Embedded System Engineering Area

- Working Company Summary

• Microsoft Internship	May.2010 - Aug.2010	Redmond, WA
• Samsung Electronics Co.LTD (R&D Center of Digital Appliance Network Business)	Aug. 2003 - Jul. 2006	Suwon, Korea
• Ismaker Co.LTD	Mar. 2003 –Aug. 2003	Seoul, Korea
• EleArt Co.LTD	Jul. 1998 - Feb. 2002	Seoul, Korea
• Freelance programmer	Mar.2002 - Mar. 2003	Seoul, Korea
• Samsung Software Membership	Nov. 2000 - Jul. 2003	Seoul, Korea

PUBLICATION / PATENT

- Conference Papers

- [1] [H. Jaygarl](#), S. Kim, T. Xie and C.K. Chang, "*OCAT: Object Capture-based Automated Testing*," to International Symposium On Software Testing and Analysis (ISSTA 2010).
- [2] [H. Jaygarl](#), K. Lu and C.K. Chang, "*GenRed: A Tool for Generating and Reducing Object-Oriented Test Cases*," the 34nd Annual IEEE International Computer Software and Applications Conference (COMPSAC 2010).
- [3] [H. Jaygarl](#), S. Kim, and C.K. Chang, "*Simple and Practical Extensions of a Randomized Testing Tool*," the 33nd Annual IEEE International Computer Software and Applications Conference (COMPSAC 2009).
- [4] H. Jiang, T. Nguyen, I. Chen, [H. Jaygarl](#) and C.K. Chang, "*Incremental Latent Semantic Indexing for Effective, Automatic Traceability Link Evolution Management*," the 23rd IEEE/ACM International Conference on Automated Software Engineering (ASE 2008).

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- [5] I. Chen, C. Yang, T. Lu, and H. Jaygarl, "*Implicit Social Network Model for Predicting and Tracking the Location of Faults*," the 32nd Annual IEEE International Computer Software and Applications Conference (COMPSAC 2008)
- [6] H. Jaygarl, K. Oyama, J. Xia, and C.K. Chang, "*HESA: a Human-centric Evolvable Situation-Awareness Model in Smart Homes*," the 2008 International Conference on Smart homes and health Telematics (ICOST 2008).
- [7] K. Oyama, H. Jaygarl, J.Xia, C.K. Chang, A. Takeuchi, and H. Fujimoto, "*A Human-machine Dimensional Inference Ontology that Weaves Human Intentions and Requirements of Context Awareness Systems*," the 32nd Annual IEEE International Computer Software and Applications Conference (COMPSAC 2008).
- [8] C.K. Chang, K. Oyama, H. Jaygarl and H. Ming. "*On Distributed Runtime Software Evolution Driven by Stakeholders of Smart Home Development.*" 2nd International Symposium on Universal Communication (IUCS 2008), Kyoto, Japan, pp. 59-66, 2008

- Workshop/Poster Papers

- [9] K. Oyama, H. Jaygarl, J.Xia, C.K. Chang, A. Takeuchi, and H. Fujimoto, "*Requirements Analysis Using Feedback from Context Awareness Systems*," the 2nd IEEE International Workshop on Requirements Engineering For Services(REFS'08).
- [10] I. Chen, H. Jaygarl, C. Yang, P. Wu, "*Information Retrieval on Bug Locations by Learning Co-located Bug Report Clusters*," the 31st Annual International ACM SIGIR Conference (SIGIR2008-Poster)

- Book Translations

Translating English books to Korean books and publishing it in Korea.

Scaling Software Agility Jun. 2008

Scaling Software Agility: Best Practices for Large Enterprises (The Agile Software Development Series)
Addison-Wesley Professional, Acorn Publisher

SWT/JFace in Action Aug. 2006

Guides you through the process of developing Eclipse-based GUIs and shows how to build applications with features your users will love. Packed with examples and no fluff
Manning, Acorn Publisher

Inside ASP.NET Aug. 2002

Deals with ASP.NET and .NET framework's high application methods
New Riders, InfoBook Co.LTD

- Patents

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Message apparatus by imaging**Patent Number P2004-0096006**

A device for storing image messages, it allows the user to input messages using RF communication without extra operations. It identifies the user when the user comes within a specific range and manifests selective messages conveniently.

AWARDS

- Certificate of appreciation for outstanding service and contribution, COMPSAC, Jul. 2010
- ACM SIGSOFT CAPS funding for ISSTA 2010, Jun, 2010
- A Silver Award in University Computer Science Association Public Exhibition, Jul. 1997
- A Gold Award in University Computer Science Association Public Exhibition, Jul. 1997
- A Bronze Award in University Computer Science Association Public Exhibition, Jul. 1996
- A Gold Award in ComSci Department's program contest, Dec. 1996

SKILLS

- Programming language

Proficient: Java, C/C++, Object Pascal, VB, C#, Web script languages (ASP, PHP, JSP)

Fair Knowledge: 8086 Assembly, ARM Assembly

- Development Knowledge

IDEs Eclipse, Visual Studio, Delphi

System Development Device Drivers for Windows family, Windows CE OEM layer programming, ARM Firmware, Platform Builder, EVC, ADS, STD, Trace 32 ICD, BDI2000 (JTAG-ICE)

Server Application Advanced Network Server Programming (TCP/IP, TELNET, FTP), JAVA Servlet, Thread programming.

Desktop Application .NET, MFC, Win32 API, Delphi Component Design/Development, ActiveX, MS Platform SDK, Apache libraries, JDKs

Database MS-SQL, ORACLE, My-SQL, mSQL, Client/Server Programming, Database Design and Tuning, Data Access Components (ODBC/ADO/OLEDB)

Web Application ASP.NET, PHP, MVC, Struts, Hibernate, EJB

Development and testing frameworks IBM Rational ClearCase and ClearQuest, CVS, Subversion, Mercury, Source Depot, JUnit, WTT, TAEF

Other software MiniTab, Spin, SMV, AgentSpeak

Other 6 Sigma green belt

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WORK EXPERIENCE HISTORY (before entering Ph.D course)

Intelligent DISPLAY (I-Display) Sep. 2005~July. 2006

Developed refrigerator with new interface. Insert a device embarked with embedded OS and application and introduce upgraded functions through it. Conducted porting and application of Windows CE OS in SMDK2410 board. Developed Guide Agent and Zoomable User Interface.

R&D Center of Digital Appliance Network Business, Samsung Electronics Co.LTD

POPular CONvergence (POPCON) Jul. 2004~ Aug. 2005

Developed digitally converged refrigerator. A home pad with brand-new concept is attached to the refrigerator. This pad allows seeing and listening to wireless television and radio as well as including schedule management, memo management, voice letters and food maintenance functions. Programmed Windows CE Kernel OAL and Device Driver on Intel PXA255 CPU.

-Press: <http://www.tmcnet.com/usubmit/2005/may/1143044.htm>
<http://www.ukwhitegoods.co.uk/modules.php?name=News&file=article&sid=1284>
http://www.kitchen-bath.com/kbb/news_trends/article_display.jsp?vnu_content_id=1000947073
<http://www.post-gazette.com/pg/05173/526658.stm>
<http://www.realestatejournal.com/housegarden/toolsgadgets/20050623-tan.html>

-Award: Digital Appliance Award in Samsung Electronics

R&D Center of Digital Appliance Network Business, Samsung Electronics Co.LTD

Embedded Platform (EMP) Oct. 2003~ Jun. 2004

Evaluated platform and operating system and constructed a method of porting the OS in the platform, in order to newly digitally converge household appliances with software. After porting and testing Windows CE, Linux, Nuclues, TROM in selected platform (SMDK2410, ARM), completed the document for them.

R&D Center of Digital Appliance Network Business, Samsung Electronics Co.LTD

Artificial Intelligence Conversationalist – Simsimi Dec. 2002 ~ Jul. 2003

Developed Simsimi is a character with artificial intelligence and answers back when the user addressed. It was widely spread through the MSN messenger in Korea (100,000 users) and many people enjoyed talking to Simsimi via MSN messenger. Currently, its main service is through cell phones and it was created through Java network server programming in Linux system.

Ismaker Co.LTD

Construction of a system for game ASP business Aug.2002~ Nov. 2002

Developed most of the system as team leader in overall platform construction. VivaBox Interactive required a program to start charging game fees by usage in PC rooms, which are widely dispersed in Korea. The project demanded difficult requests, such as huge database for fee charging, a client for checking games usage time in computers and providing the games and huge network server (simultaneous connection of 200,000) to collect clients' information.

VivaBox Interactive

PVR(Private Video Recording) Aug.2002 ~ Sep.2002

Developed program for watching and taping TV signals (composite input) in PCs using capture equipment connected to PC and the program allows recorded TV programs to be watched in PCs through outside web browsers. It has functions such as controlling various capacities outside through the web, providing EPG that allows recording the TV program selected by the user.

Digital Solution Center, SAMSUNG ELECTRONICS Co.LTD., KOREA

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Solution for quarantining sites for children's safety May.2001 ~ Nov.2002

Developed EleArt's I-Boho product, which has a smart card in the keyboard and when the parents remove the smart card, the computer's Internet quarantines connection to adult sites.

- Won President of Korea's award at Soft Expo 2000 in Korea

EleArt Co.LTD

Remote PC Control Program for Kiosk Jan.2001 ~ May.2001

Developed the program like PC Anywhere and VNC, which remotely controls the specific computer by logging into the destination computer. Structured by using network programming, screen capturing, API Hooking and file sending.

EleArt Co.LTD, Internet Solution Builder Co.LTD

Kodicom Official Homepage Nov.2000.~ Dec.2000

Consulted and developed their homepage, participating in every step from planning to the end of the development, as the company named Kodicom requested to create their homepage

Kodicom co.Ltd.

Maintenance Funding company homepage Feb.2000 ~ Feb.2001

Maintained LG Investment Trust and Dongwon Investment Trust's official homepage, which was structured by EleArt. It was structured with Web server in Sun or AIX and had Oracle environment using Java Servlet. The main operation was to comply to specific requests by the clients every month.

Eleart.Co.LTD for LG Investment Trust and Dongwon Investment Trust

Internet TV SetTop Box Feb.2000 ~ Nov.2000

Before embedded OS was widely known, revised Windows 98 resources, developed a new Windows Shell and topped it off with an application program to create an STB that allows Internet usage through TV.

EleArt Co.LTD

Hitel 2000 mail client Nov.1999.~ Feb.2000

Developed a program similar to AOL client for a Korean government owned service Hitel, which is similar to Usenet or AOL in the United States. Constructed and developed a mail client program like outlook.

EleArt Co.LTD for Korea Telecom Hitel.

The ombudsman of Korea Intranet Jul.1999 ~ Oct.1999

Constructed Intranet for electronic documents of ombudsman of Korea, which is a public organization. Used Oracle ISAPI and built PC communication service that connects through telnet due to the needs of the telnet service. After this service was developed, all approvals and past record data were computerized.

EleArt Co.LTD, The ombudsman of Korea

Internet Phone & PC to Phone, Phone to PC Jan.1999 ~ Jun.1999

Developed not only PC to PC via Internet but also created hardware that supports Phone to PC, PC to Phone but did not succeed commercially. During the time when there were endless opportunities in the Internet, the idea to allow telephone calls through the Internet came up in the company and was executed.

EleArt Co.LTD

IBIS(Intelligent Building Information System Jul.1998.~ Nov.1999

Developed program for looking over various building maintenance with the entrance/exit system as the main function.

Eleart.Co.LTD

REFERENCES

Prof. Carl K. Chang

Department of Computer Science

226 Atanasoff Hall

Ames, IA 50011-1041

Phone: +1-515-294-4377

Email: chang@cs.iastate.edu

Homepage: <http://www.cs.iastate.edu/~chang/>

Prof. SungHun Kim

Department of Computer Science

The Hong Kong University of Science and Technology

Clear Water Bay, Hong Kong

Email: hunkim@cse.ust.hk

Homepage: <http://www.cse.ust.hk/~hunkim/>

Prof. Cheng-Zen Yang

Dept. of Computer Science and Engineering

Yuan Ze University

135 Yuan-Tung Road, Chungli

Taiwan, 320, ROC

Office: +886-3-463-8800 ext 2361

FAX: +886-3-4638850

Email: czyang@syslab.cse.yzu.edu.tw

Homepage: <http://syslab.cse.yzu.edu.tw/~czyang/>

Prof. Chong-woo Woo

Dept. of Computer Science and Engineering

Kookmin University

861-1 JungLung-Dong

SungBuk-Gu, SEOUL, Korea, 136-702

Phone: +81-2-910-4790

Email: cwwoo@kookmin.ac.kr

Homepage: <http://ai.cs.kookmin.ac.kr/>