

Introduction to Computer Science

Jiaheng Lu
Department of Computer Science
Renmin University of China
www.jiahenglu.net

本周报告的同学：


Lin Shanshan (2008102681)

Hu Sha (2008102684)

Wang Qi (2008102657)

Preparing for The Job Search

Written Materials for the Job Search

- C.V. or vita
 - Research plan
 - Web site
 - Cover letter
- 

Preparing for The Software Engineer Job Search



Example advertisement – check underlined segments

▶ Sr. Software Engineer

▶ Job Description

The Software Engineer will work as part of an agile multi-disciplinary team to develop the software components of an enterprise-scale hospital information system. The individual must be a team-player and willing to function as a designer, developer, tester, and an analyst as required to achieve the goals of the team.

▶ Specific Responsibilities:

- ▶ • 5+ years of professional experience developing commercial or enterprise-scale software products
- 3+ years of development experience with Java and J2EE (EJB, Servlets, and JSP)
- XP, Agile development experience is preferred
- Healthcare domain knowledge is preferred
- Exposure to multiple DBMS systems is preferred
- Understands concepts of the software development lifecycle
- Ability to function as a designer, developer, tester and to some degree, an analyst
- Must possess strong organization and communication skills
- Must exhibit a sense of and demonstrate responsibility, focus on delivery, and ability to work independently with appropriate technical direction
- Comfortable in a fast-paced, team-oriented environment
- Strong written and verbal skills from both business and technical perspectives

Java 程序工程师

- ▶ 工作职责：
CMS、Workflow、MOM产品升级、开发
- ▶ 职位要求：
 - 1、计算机相关专业本科以上学历；
 - 2、一年以上JAVA开发经验；
 - 3、精通JAVA语言，J2ee环境下的开发（JSP/Servlet、JMS、JNI、STRUTS）；
 - 4、熟悉面向对象设计方法独立完成模块设计、开发；
 - 5、掌握UML，英文熟练；
 - 6、开朗乐观，善于沟通，积极进取；
 - 7、有相关产品经验优先。


Environment

- ▶ Dot Com crash
- ▶ Globalization, outsourcing
- ▶ Maturing of SW industry

Still – bright future →

- ▶ New ways of making SW – Global SW Engineering; Open Source
- ▶ New areas: bio technology, games, utility computing, wireless, security, embedded SW etc.
- ➔ **new skills are needed – technical, organizational and communicational**

New Trends

- ▶ *Open Source*: sometimes you create SW by reusing SW from others – need to know how to operate in this environment
 - ▶ *Global SW Engineering, outsourcing*: most likely you will develop SW with somebody you meet very rarely
 - ▶ *Computers in Life Sciences* (bioinformatics, SW for medical professionals, bio imaging, data management for health)
 - ▶ *Games*: a lot of very complex and efficient SW but also need to know comp. arch., AI and art
 - ▶ IT and CS still in hot demand
- 

Traditional skills of SW Professionals

- ▶ Before: basics such as data structures, programming, basic alg.
 - Write “hello world” Create WWW site
 - Program HTML
 - Set up and create DB
- you got well paid job!

Project organization, communication and interpersonal skills did not matter much due to shortage of skills

New Skills Needed

- Today – you need **additional skills**:
 - Project and SW engineering skills
 - Ability to participate, design or manage global SW development
 - Understand users and application domains (bio, art, finance)
 - Ability to create systems that delight the users
 - Ability to architect and deliver systems from components done by others
 - Interpersonal and communication skills

Don't forget: knowing basics is still necessary (data structures, programming, architecture)

Finding a job

- ▶ Network of friends and professional associates is the key – most important!


Also

- ▶ Company WWW sites
- ▶ On-line search services
- ▶ Recruiters
- ▶ Job Fairs
- ▶ Newspapers

Try it all....




Finding a job – on-line or off-line application submission

- ▶ **Goal:** to pass the first filter (HR or some kind of KW screening program)
 - ▶ **Salary:** leave it open, do not enter numbers
 - ▶ Be flexible, agree on travel etc.
 - ▶ Cover letter or cover e-mail
 - ▶ Resume
 - ▶ Many times sending surface mail gets better attention, especially if you know somebody.
 - ▶ Lately, on-line submissions had little value, not even a response is given
 - ▶ Try to submit some kind of cover letter or e-mail
- 


Resume

1. Objective
 2. Skills (be honest)
 3. Awards, something very special
 4. Education AND experience (whichever is more impressive goes first)
 5. Hobbies etc.
 6. Visa status (if applicable)
 7. References: available upon request (Do not give them before hand. Have your set of references ready and send them your resume).
- ▶ 1 page!!!! (unless you are very senior or going for academia)


Resume >> Objective

- ▶ A few lines only
 - ▶ Not too general, not too specific. Avoid useless stuff (“to find challenging position”). At least mention whether it is in R&D, or sales support, QA etc (i.e. what area of work)
 - ▶ Suggestion: cover development, QA and support
 - ▶ Many opportunities in QA. QA is challenging, interesting and done mostly in US even if SW is developed elsewhere
- 


Resume >> Skills

- ▶ Technical skills (OS, languages, tools)
 - ▶ Communication skills
 - ▶ Organizational skills
- 


Resume >> Experience

- ▶ Need to clearly denote company, position, time, with nice layout
 - ▶ Speak in past tense, with verbs like “developed, designed, delivered, implemented...”
 - ▶ Explain WHAT was done and what YOU did. Say also WHAT WAS UNIQUE about it (fastest, most reliable, done in short time, sold well...)
 - ▶ Avoid “laundry list” (i.e. flat list of items)
 - ▶ Did you supervise somebody, did you talk to customers outside of your company? Did you collaborate with sales, marketing?
 - ▶ Give reference to product names, WWW sites
- 


Resume > Experience

- ▶ Briefly explain your projects, MS Thesis, any significant activity where there was a deliverable, work in a team, work with somebody else etc.
 - ▶ If you worked in some other jobs, where skills are transferable and relevant, say it (supervised somebody in father's mechanic shop etc.). Good organizational skills are transferable: if you managed waiters it means you can deal with people!
- 


Resume “look and feel”

- ▶ Nice formatting and layout
 - ▶ Easy to read
 - ▶ Sections clearly marked
 - ▶ Clean print (no poor copy)
 - ▶ Check typos, errors, English
 - ▶ If on-line, check formatting and make sure it looks right on the receiving end. Use PDF.
 - ➔ Has to look well organized, done with care and professional
- 

Do the homework before any contact with the company

- ▶ About the company
 - ▶ Products
 - ▶ Management
 - ▶ Market share
 - ▶ Competitors
 - ▶ Download and try products
 - ▶ Read reviews about the company and products
 - ▶ Check the people if you can and find out about them
 - ▶ Ask around
 - ▶ Use WWW, Google
- 

Phone screening

- ▶ **Their Goals:** Used to filter candidates before inviting. Saves time and cost for all
 - ▶ **Your Goal:** impress them, pass their test. You also must to learn about the company and position.
 - ▶ Done by recruiters, HR or sometimes technical people
 - ▶ Speak clearly, be articulate.
 - ▶ Listen, and do not talk too much at the beginning, do not interrupt them.
- 

Phone screening (2)

- ▶ Questions asked:
 - Going over the resume and clarifying it
 - Possible fit
 - Technical screening I.e. tests – very basic
 - Asking about your key strengths and skills and possible fit as you see it

Phone screening (3)

- Your favorite projects
- Why are you leaving. Tricky. Be honest if there were problems but stay at high level. Do NOT criticize anybody
- Any questions you have (ask about the job, the company, management etc.)
- ▶ Do not ask about money. If asked, stay vague and avoid it. Do not give them any numbers!
- ▶ Example:
 - They: What is the salary you want?
 - You: What is the range for my education and experience
 - They: \$ 50 – 70 K
 - You: I believe that my experience qualifies me for upper 60s

Phone screening (4)


- They usually ask you if you have questions. Try this:
 - Company vision
 - Expectations for the position you are interviewing
 - What are the key company competitors and problems that you could solve
 - Opportunity for advancement

Phone Screening (4)

- ▶ Visa:
 - Let them ask. If asked, be honest.
 - If they are reluctant, offer to pay costs if they do the paperwork
- ▶ Benefits:
 - Medical (what plans, how much you pay)
 - Stock (long story)
 - Vacation
 - Sick days


Interview – you are invited!

Do the homework first

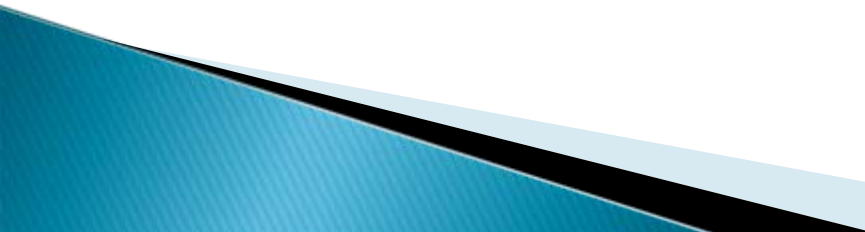
- ▶ Check the company, management, products, competitors
 - ▶ Download and play with their products. Write down comments (questions, suggested improvements)
 - ▶ Know as much as possible about everybody on the itinerary
 - ▶ If you are working with recruiter, they should help you.
 - ▶ Good companies always have an interview host, ask him/her for info
 - ▶ Refresh on your past work and portfolio
 - ▶ Think in advance what would you do in next product if you were in that company. How about their competition? Prepare questions.
- 

Interview


>> basics

- ▶ Dress neatly and nice. Men: Suit is preferred or at least nice pants, jacket and tie. This holds even if the company CEO is barefoot. Women: professional, not too flashy
 - ▶ Show up on time
 - ▶ Check exact directions and office numbers before. Bring their phone with you
 - ▶ Bring itinerary
 - ▶ Bring resume (several copies) and your portfolio (projects, papers).
 - ▶ Eat before.
- 


Interview >> first and other non-technical impressions – IMPORTANT

- ▶ Good eye contact and handshake
 - ▶ Dressing
 - ▶ Speak clearly and loud enough
 - ▶ Be happy, smile. Be confident, not tense, not too relaxed
 - ▶ Sitting: not laid back, not too much forward.
 - ▶ Be a good listener, do not interrupt, especially at the beginning. Use that to collect info and adjust what you will say.
 - ▶ But, don't be passive either
 - ▶ Show enthusiasm
 - ▶ Eat slowly. Order very small meal because they will be asking you questions all the time. No alcohol, no expensive meals.
 - ▶ No jokes
- 


Interview >> first and other non-technical impressions (2)

- ▶ Be sensitive to cultural issues and common behaviors of different nationalities etc.
 - ▶ You will be interviewed by people who come from all over the world
 - ▶ Respect “personal space” of others (keep the distance, don’t hug them etc. – some cultures do not like that)
- 

Interview >> typical questions

- ▶ Verifying your entries in the resume. Checking that you really know what you say you know
 - ▶ Other strengths: communication, organizations;
 - ▶ Technical tests (good luck)
 - ▶ Puzzles, to see your reasoning and how you deal under stress
 - ▶ Tell me about yourself (this means professional stuff only please)
 - ▶ Your most favorite project
 - ▶ Did you work with anybody outside of your group/company?
- 


Interview >> typical questions

- ▶ How do you deal with a change
 - ▶ How do you deal with conflict (technical, personal)
 - ▶ What are your weaknesses (prepare something on this)
- 

Interview >> what should you ask

- ▶ Job expectation
 - ▶ About the company, product directions
 - ▶ Company vision
 - ▶ Company values
 - ▶ Challenges they face (technical, competition, business)
 - ▶ Customers
 - ▶ Management and their style
 - ▶ Your immediate group and management
 - ▶ Culture
- (OK to bring written questions)

Interview > > compensation

- ▶ Do not start this subject, let them do
 - ▶ HR would probably tell you about benefits up front
 - ▶ Do not offer salary figure, not even the range, let them suggest (use previous example)
 - ▶ Ask about the whole package (salary, benefits, vacation, sick days, stock...)
 - ▶ Ask what do they pay for comparable skills and experience
 - ▶ Do not start visa questions, do it only if they ask or when you think you are close to getting the offer
- 

GOOD LUCK!

