

# LANGUAGE & CONTENT HANDBOOK



<b>IV</b>	Introduction
<b>V</b>	General Guidelines
	Sample Interview Questions
<b>2</b>	- <i>General Questions</i>
<b>3</b>	- <i>Hardware / Software</i>
<b>4</b>	- <i>Software Development</i>
<b>5</b>	- <i>Data Telecommunications</i>
<b>6</b>	- <i>Databases</i>
<b>7</b>	- <i>Systems Analysis &amp; Design</i>
<b>8</b>	- <i>Web Design</i>
<b>9</b>	- <i>Security</i>
<b>11</b>	Resume Preparation
<b>13</b>	- <i>Components</i>
<b>16</b>	- <i>Technical Resume</i>
<b>19</b>	- <i>Sample Resumes</i>

# Introduction

Students in Bachelor's degree programmes are required to sit the Language and Content Examination during the student's final year. This oral examination, tests not only their knowledge of the content area of their programmes, but also their communication skills.

Students found with deficiencies must re-sit and pass the examination in the subsequent semester.

The examination is administered by an impartial panel of examiners consisting ideally of a minimum of four members. This includes a representative from the Department of English and Modern Languages, an external off-campus examiner from the core area, and faculty members from the Department of Information Science. All panel members are chosen by the department in conference.

Since the purpose of this examination is to test students' specific knowledge and their oral communication skills, it will consist of general questions that test the student's ability to formulate a meaningful answer and present it in a clear, concise and persuasive manner. In preparing for the examination, students will review their course work in preparation for an oral presentation.

This document will provide you with some general guidelines to help you to prepare effectively for this examination.

# General Guidelines

- Treat this oral examination as if you were going to a job interview. You should be dressed and groomed in a professional manner just as you would for any job interview. Make sure that you arrive early.
- Bring with you enough copies of your resume for each member of the examination panel. Since the panel will have at least four members, you should perhaps bring along eight copies of your resume. Ensure that the Career Objective in your resume reflects your specific area of interest. Although you can expect questions from any area of computer/information science you will have covered in your degree, questions will most likely be driven by the information given in your Career Objective.
- Do your homework! Review your core subjects, and subject emphasis. Be ready to support your career interest with specific subject information targeted toward your career objective. Have your facts ready!
- Once you have finished studying, begin role playing (rehearsing). Use the general and specific questions provided in this document. Write down answers if it helps to make your presentation more concise. Try to keep your answers to the information your interview panel will want to know.
- Maintain eye contact with your interviewers. Show that you are confident about the subject material you have studied, particularly in your area of interest.
- Avoid negative comments about your educational and work experience.
- Listen and adapt. Be sensitive to the style of the interviewer.
- You will be evaluated in three broad categories – communication skills, content area, and professionalism. Focus on clarity and articulation, correct grammar, and logical organization of ideas. Not only is accuracy important when answering questions in your content area, you should also be able to apply this knowledge in the real world.

# SAMPLE INTERVIEW QUESTIONS

# GENERAL QUESTIONS

- What five adjectives describe you best?
- Tell me about the one thing in your life you're proudest of.
- What extracurricular activities are/were you involved in?
- Why did you choose your major?
- What is your long-term employment or career objective?
- Where do you see yourself in 5 years - academically and
  - professionally?
- Who or what in your life would you say influenced you most with your career objectives?
- What would you say is the most important thing you are looking for in a job?
- What are some of the things you would avoid in a job?  
Why?
- What are your strong points?
- What are your weak points?
- In what courses did you get the worst grades? Why?
- How does your degree prepare you (a) for a career in **[industry]** or (b) to excel as a **[job title]**?
- What qualifications do you have beyond academics that qualify you to make a successful transition into business?
- How would you advise someone who wants to be enrolled in the Computer Information Science vs. the Computer Science program at NCU?

- Which desktop operating systems are you familiar with?
- What does DHCP stand for and what is its purpose?
- A customer complains that his computer is working slowly. What things should you check?
- Describe a situation where you have had to deal with a difficult person and how you handled it? Do you think you should have done anything differently?
- Would you describe yourself as a problem solver? If so, why? Can you give any example.
- What is the use of Safe Mode? When should we use it in Windows?
- Which command is used to check IP configuration?
- What is the blue screen of death?
- What are some common sources of computer viruses and how can you prevent being infected?
- How do I find the path that a packet takes to its destination?
- What happens when you use cables longer than the prescribed length?
- How do you stay informed about your field?



- What is meant by OOP?
- What are the major differences between imperative, object-oriented, functional, and event-driven programming languages?
- What is polymorphism? Explain with an example?
- What is recursion?
- What is the difference between a class and a structure?
- What is function overloading and operator overloading?
- What is the difference between an object and a class?
- What is a friend function?
- What is the difference between a linked list and an array?
- What is the Big-O notation for the various data structures (e.g. array, stack, binary search tree, linked list, etc.)
- What do you know about Agile software methodologies?
- Distinguish between static binding and dynamic binding.
- What are important aspects of GUI design?
- What is meant by "3-tier architecture"?
- Describe your favorite build environment.
- What is SOLID?
- What method would you use to look up a word in the dictionary?
- What are metaphors used for in functional design?
- Are design patterns the same thing as frameworks?

- Differentiate between the various network topologies.
- What is difference between baseband and broadband transmission?
- What is the purpose of DNS, DHCP, ARP, ICMP, SMTP?
- What are the data units at different layers of the TCP/IP protocol suite?
- What are the types of Transmission media?
- What are the typical devices that operate at each layer of the OSI or TCP/IP model?
- What is the difference between bit rate and baud rate?
- Describe TCP/IP and its protocols
- What is Load balancing?
- Explain subnetting.
- What is VPN?
- Briefly describe NAT.
- Discuss routing algorithms/protocols.
- What is a private IP address?
- What are MAC addresses?
- What is the difference between a straight-through and crossover cable?
- Explain clustering support.
- What is a VLAN?
- What is IPv6?

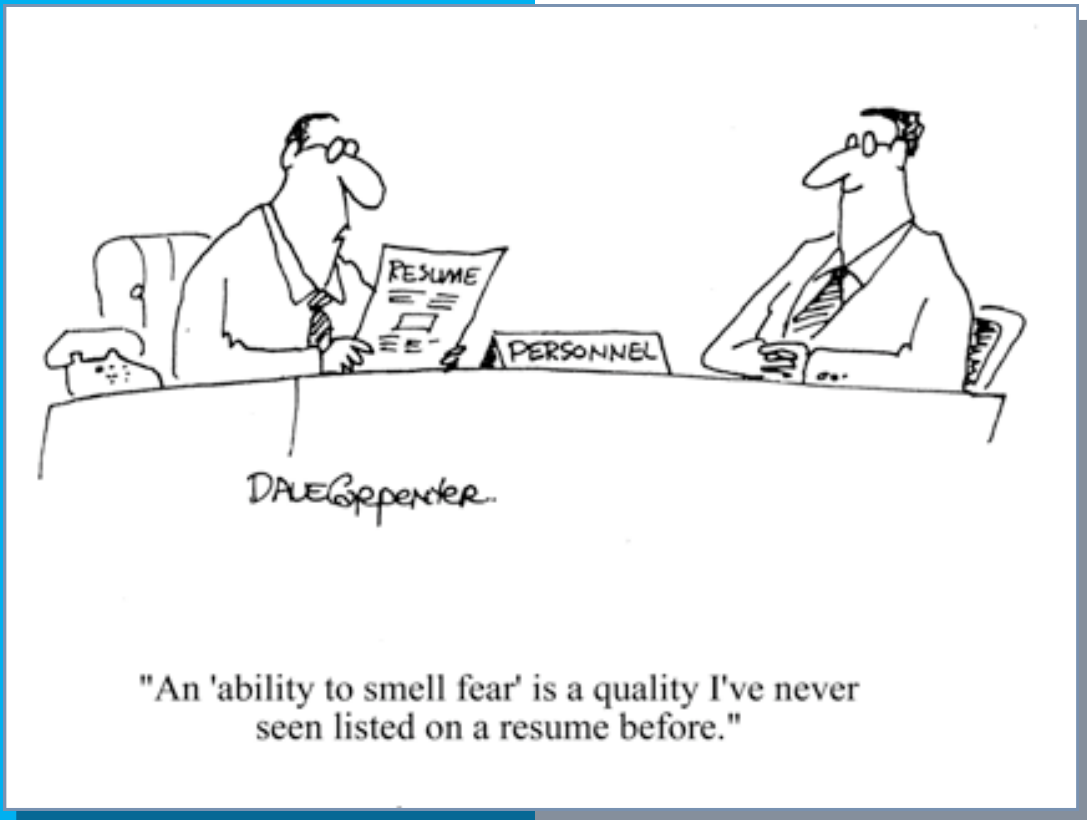
- Explain the concept of data normalization.
- What are some advantages of normalization?
- What is SQL?
- Distinguish between the various entity relationship.
- What is the purpose of a data warehouse?
- Distinguish between Data Definition Languages and Data Manipulation Languages.
- What is a cursor?
- Distinguish between dynamic, static, and keyset cursor types.
- What is Data Warehousing?
- Define B-Trees.
- What can you use to resolve field anomalies?
- What are the four main types of keys?
- Explain how you would resolve many-to-many relationships.
- Compare any three popular Database Management Systems.
- Which database management system would you recommend to be used in a start up eCommerce enterprise, and why?
- How many concurrent connections can Microsoft Access/MS SQL Server accommodate?
- What is a DBMS?
- Distinguish between Hierarchical, Network, Relational, and Object-Oriented DBMS.

- Provide information on your most recent programming project.
- Describe a time when you successfully persuaded another person to change his/her way of thinking or behavior.
- What characteristics should a system analyst possess to be good at his job?
- List and briefly describe the various types of information systems?
- List and briefly describe the common phases of the Software Development Life Cycle?
- What are the characteristics of a well-stated system requirement?
- Distinguish between unit testing and integration testing.
- List and compare the basic system implementation strategies.
- Explain the following project management techniques and identify the context in which each might be used: CPM, and Gantt chart.
- Discuss the following project management concepts: lag and lead time, and critical path.
- Discuss documentation with respect to the development of computer systems?
- List and briefly describe the components of an Entity Relationship Diagram.
- Name a time when you identified strengths and weaknesses of alternative solutions to problems. What was the impact?

- What is a markup language?
- What's the difference between HTML and XML?
- What is a web service?
- Define SOAP, WSDL, JSON, SOA, UDDI, REST.
- What are some of the considerations you should take when designing a web site?
- What is CSS? What is it used for? What are its advantages?
- In how many ways can a CSS be integrated as a web page?
- What are the derived benefits from HTML5 and CSS3?
- How does Z index function?
- Explain the following: web server, client-side scripting, server-side scripting.
- What is jQuery?
- What is called chaining?
- How would you go about linking a database to a website, what technologies would you need to use?
- What are a few of your favorite development tools and why?
- What's your favorite development language and why? What other features (if any) do you wish you could add to this language?
- Do you find any particular languages or technologies intimidating?
- What is CDN? What are the types of CDNs?
- Compare the various available web servers.

- You need to reset a password-protected BIOS configuration. What do you do?
- Why would you want to use SSH from a Windows PC?
- What's the difference between Symmetric and Asymmetric encryption?
- What is SSL and why is it not enough when it comes to encryption?
- What is XSS?
- What are salted hashes?
- What are the three ways to authenticate a person?
- How would you judge if a remote server is running IIS or Apache?
- You see a user logging in as root to perform basic functions. Is this a problem?
- How do you protect your home Wireless Access Point?
- What is the CIA triangle?
- What is the difference between an HIDS and a NIDS?
- What is the difference between a vulnerability and an exploit?
- What's the difference between a White Box and a Black Box test?
- What is the difference between Information Protection and Information Assurance?
- What is the Three-way handshake? How can it be used to create a DOS attack?

# RESUME PREPARATION



Your resume is a marketing tool created to gain a prospective employer's interest so that you will be invited to an interview. It briefly, in one or two pages, outlines your work experience, education, and skills. There is no one right way to prepare or set out a resume, just certain principles or guidelines.

- Be honest.
- Emphasize the positive.
- Avoid wordiness.
- Keep it brief - no longer than 1 or 2 pages.
- Use labeling, clear formatting and alignment and white space to ensure your valuable information is noticed.
- Include enough detail and concrete examples to support your career objective.
- Use a standard typeface, 10-14 points in size (e.g. Times New Roman, Arial, Helvetica, Century Schoolbook).
- Avoid graphics, boxes, shading, and fancy decorative type.
- Use a combination of bullets and short paragraphs.
- Avoid italics and underline (they don't fax or scan into database well) and make it more difficult to read, as does the use of too many brackets.
- Typographical, spelling and grammatical errors are unacceptable and may result in your application not being considered. - edit furiously.
- Do not over capitalize or over bold (e.g. 2 or 3 lines in a

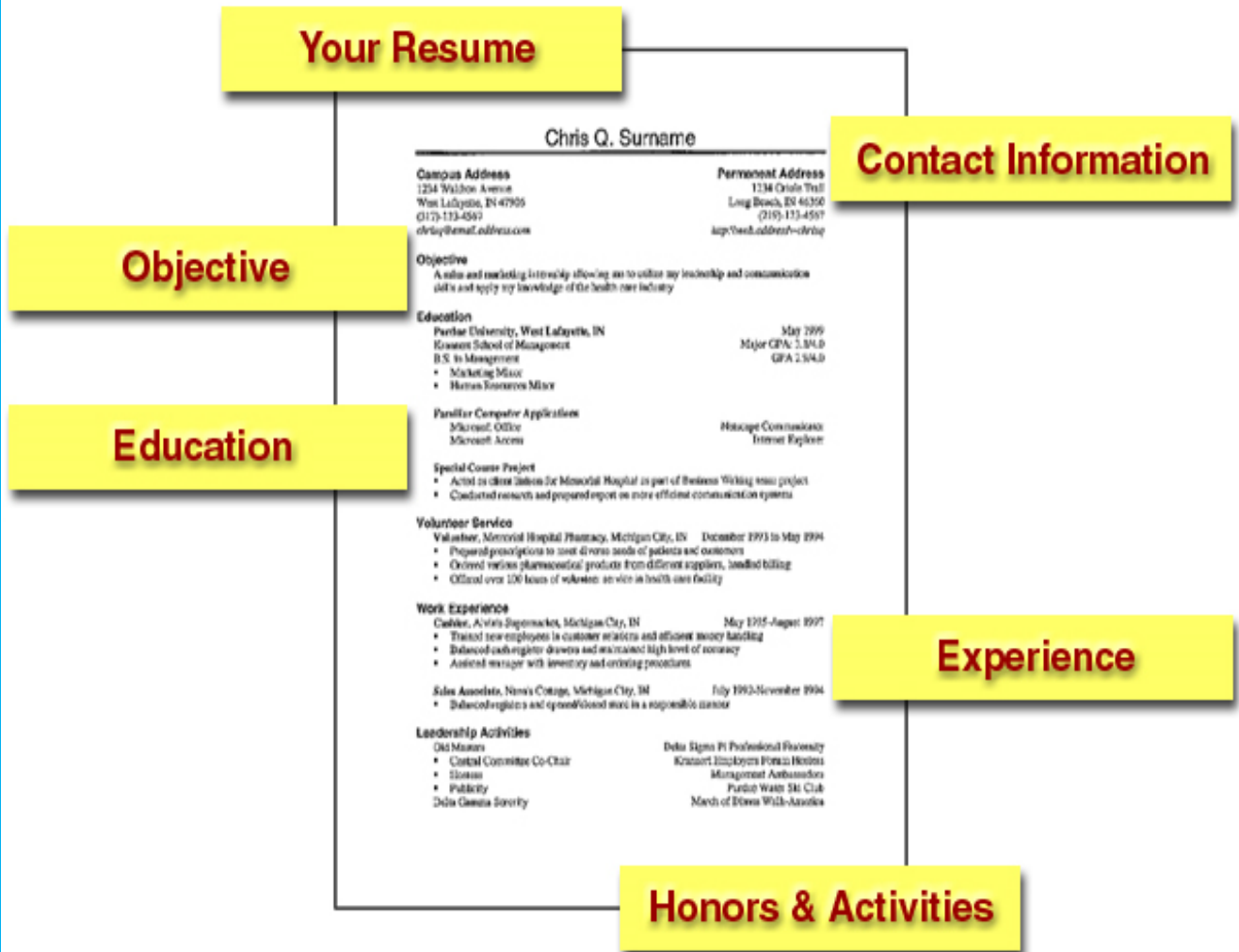


paragraph).

- Limit the use of abbreviations.
- Spell out terms, degrees and addresses.
- Be consistent in formatting. Put dates, titles, full stops etc. in similar places throughout your resume.
- Format each section similarly if possible to help the reader digest your information.
- Be consistent with your language throughout your resume.
- Use action verbs to indicate achievements.
- Think about what the employer will value most.
- Make the resume is as simple and easy to read as possible.
- Make sure that your resume is well presented and well organized, so that an employer can immediately see the most relevant information - remember clear headings and lots of white space.
- Balance the resume as to what the employer will consider most important / relevant.

## **Paper**

- Use light colored 8 ½" × 11" good quality bond paper.
- Print on one side only.
- Do not fold or staple your resume.



## Heading/Contact Details:

- Name
- Mailing Address
- Telephone number(s)
- E-mail address

## Career Objective:

This brief statement describes the type of job or occupational area you are seeking.

- To explain any confusing discrepancies in your background.
- To let reviewers know exactly what are your areas of interest
- To capture the imagination of the reader - to stand out
- To improve your chances of being interviewed

## Education:

- Most recent qualifications first
- The full and official name of your degree (in bold)

- The full name of the institution at which this took place (University, High School)
- A brief outline of the knowledge and skills gained in each qualification that are relevant to the position
- Relevant Projects: If you are working in a highly skills-based area or a field where there is a great deal of project work, you may wish to include this section. You should detail each relevant, practical project you have undertaken listing the skills you developed during the project.
- Your Grade Point Average - if it is 3.0 or greater

### **Work Experience:**

- Most recent employment first
- From-to dates of employment
- The name of the position (in bold)
- The name of the organization
- Your achievements in the job - if possible (e.g. initiated..., suggested..., improved...)
- Include internship/training/volunteer/vacation employment positions.

### **Computer Skills:**

List your computer skills and attributes in the following categories:

- Computer Language
- Software
- Hardware

### **Honours and Awards:**

List any scholarships, or formal recognition of outstanding achievements.

### **Professional Memberships:**

Associations to which you belong(ed) and, if you held a committee position, what it involved. Include dates (from - to).

### **Extra Curricular Involvement:**

Interviewers highly value students who can show evidence that they are well-rounded and willing to contribute to a variety of areas outside of

their study and work

- ◆ Your Role
- ◆ From-to dates
- ◆ The name of the Club/Society
- ◆ Your achievements and contributions while in this role

## **Interests:**

Activities that you like to do in your spare time - make these interesting and those that make you a well-rounded candidate (e.g. perhaps something team-based, something individual and something that demonstrates leadership)

## **References:**

You may include a statement that "references are available upon request" at the bottom of the resume. A reference is someone who knows the quality of your work. You will need at least TWO, perhaps one employment and one academic. Make sure you have asked the referee before you include their name. References should be typed on the same quality of paper as the resume and presented separately upon request. Be sure you have the following information on your references:

- Name of person
- Contact number (most references prefer to be reached at work)
- Position
- Company name
- E-mail address

The following phrases and words may help with organizing your resume statements. They convey involvement and accomplishments and make

Interaction with...  
Acted as liaison for/between...  
Edited...  
Established...  
Formulated...  
Handled...  
Initiated...  
Implemented...  
Maintained...  
Managed...  
Assigned territory consisting of...  
Promoted to/from...  
Instrumental in...

Recipient of...  
Honored as...  
Remained as...  
Innovation resulted in...  
...amounting to a total savings of...  
Recommendations accepted by...  
Administered...  
Assisted with...  
Adept at...  
Analyzed/Assessed...  
Arranged...  
Coordinated...  
Conducted...

## RESUME TIPS FOR TECHNOLOGY PROFESSIONALS

By Kim Isaacs, Monster Resume Expert

With increasing numbers of job seekers competing for the most desirable technology jobs, your resume needs to be better than the rest to get noticed.



### Technical Summary

Effective technology resumes clearly show the candidate's technical skills-- a hiring manager shouldn't have to go fishing for this information. An excellent way to include technical knowledge is to add a Technical Summary or Technical Expertise section to your resume. Break the section into subcategories so the reader can quickly scan through your knowledge of programs and applications. Possible categories include technical certifications, hardware, operating systems, networking/protocols, office productivity, programming/languages, Web applications and database applications. List only those programs/applications that you could confidently discuss in an interview.

### Career Summary

Many technology hiring managers say they are searching for candidates who offer more than technical credentials. Soft skills such as interpersonal communications, ability to work collaboratively and commitment to achieving corporate goals are just as desirable. In other words, your resume needs a personality. The reader shouldn't be impressed only by your technical qualifications, but should also find you to be likeable and well-suited for the team. You can highlight some of these skills in a Career Summary section.

### Focus on Technical Results

Technology job candidates usually make one of two critical errors on

their resumes -- either the document is excessively long with excruciating detail on every assignment ever completed, or too short with hardly any descriptions at all. There needs to be some middle ground -- the resume should be succinct yet effectively showcase your achievements.

### **What to Include**

For each position you've held, give a brief synopsis of the scope of your responsibility. Then show how your performance benefited the company. Give examples of how past initiatives led to positive outcomes such as enhanced efficiency, faster time-to-market, monetary savings, etc. Accomplishments are most powerful when they are measurable, so include actual performance figures whenever possible. Focus on your most impressive technical projects/ accomplishments. What types of challenges did you face? What did you do to overcome the challenges? How did your performance improve the organization's bottom line?

For contract work in technology, provide a bulleted list of your top projects, indicating the company (or type of company if confidential), reason for hiring you, scope of your project, your specific approach to the project, challenges/obstacles faced, work performed and benefits to the company.

If you are new to the technology field and concerned about a lack of experience, consider offering free or low-cost technical services to charitable organizations, friends, family or local businesses. Doing so allows you to hone your craft and show related work or volunteer experience on your resume. Also, pursue as much training as possible to get up to speed. Entry-level candidates should focus on their potential in the field, ability to learn challenging concepts quickly and

motivation to succeed in the industry.

## **Keywords**

The best keywords for your resume depend on your job target and experience. Specific programs and applications are often used as keywords, which is another reason a Technical Summary is a good idea.



# Ann Simpson

14 Rosebud St. | Sometown, NY 10000 | H: 718-555-5555 | C: 917-555-5555 | annsimpson@somedomain.com

## DATABASE ADMINISTRATOR

Database administrator (DBA) with extensive experience designing, coding, testing and supporting next-generation database solutions in Oracle enterprise and SQL Server environments. Proficient in an assortment of technologies, including Oracle 9i/10g, DB2, Access, Sybase, MS SQL Server, JDBC, Visio, Apache Web Server, Java, C++, XML, Windows and Linux (complete list on request). **DBA skills include:**

- Oracle 10g Database Administration
- Performance Tuning & Capacity Monitoring
- Data Security, Backup & Recovery
- Standby/Failover Administration
- Oracle RAC & ASM Administration/Installation
- Oracle Forms and Reports Development
- Database-Backed Web Solutions
- SQL Tuning in an Oracle Environment

## EXPERIENCE

ABC COMPANY, Sometown, NY  
Database Administrator

9/2004 - Present

Manage Oracle database administration assignments for diverse industry clients. Enhance database performance, perform restores, implement recovery procedures, handle performance tuning and conduct regular system backups. Ensure technical and functional designs meet business requirements.

### Key projects:

- Served as DBA or project lead in the completion of 80+ medium- to large-scale implementations, managing projects from business requirements analysis to solutions delivery and support.
- Managed a \$1.2 million data-integration project for financial services firm that consolidated information from accounting applications, third-party market data and internal equities/fixed income applications.
- Contributed to furniture retailer's 15% revenue growth in 2007 by standardizing content from disparate databases, enabling sales and support staff to quickly respond to customer requests.
- Created Web-enabled, group-scheduling system for a large university, allowing students to view and print schedules for current and future semesters. Delivered solution on time, on spec and on budget.
- Innovated time-saving, robust employee data-intake system that automated database update functions, enabling new salary and process-exception information to be automatically populated.
- Developed and tested storage strategies and disaster-recovery plan for large manufacturing company's operational database, delivering solution that guaranteed recovery performance and high availability.
- Enhanced end users' understanding of database systems by conducting pre-implementation workshops, delivering group and individual training sessions and creating user-friendly training materials.

DEF COMPANY, Sometown, NY  
IT Internship

12/2003 - 5/2004

Selected for competitive internship with leading consulting firm. Developed functions, scripts and reports that were instrumental to the success of high-priority development projects.

### Key projects:

- Developed approximately 25 custom financial and auditing reports using Crystal Reports with T-SQL, JDE Report Design Aid, MS Excel and Access.

## EDUCATION & TRAINING

ABC UNIVERSITY, Sometown, NY  
Bachelor of Science, Major in Computer Science

5/2004

DBA Workshops: Oracle Database 10g Administration (2006), Advanced Oracle DBA (2005), Intro to Oracle (2004)



# Michael Alexander

14 Hart Way • Somertown, MA • (555) 555-5555 • michael@somedomain.com

## Targeting Entry-Level Help-Desk Positions

- Upcoming XYZ University graduate offering a strong academic background in IT combined with excellent internship experience as a help-desk analyst.
- Consistently recognized for technical troubleshooting skills used to rapidly and cost-effectively resolve challenging technical issues.
- Quickly learn and master new technology; equally successful in both team and self-directed settings; and proficient in a range of computer systems, languages, tools and testing methodologies.

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## EDUCATION

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XYZ UNIVERSITY, Somertown, MA

Degree expected 12/11

B.S. in Computer Information Systems • GPA: 3.7/4.0

*Concurrent Employment with College Studies:*

- **Student Help Desk Technician** (2009 to Present): Provide networking/desktop support and perform mainframe and account maintenance tasks. Earned commendations for teamwork, flexibility and work excellence in providing IT support to students and faculty.
- **Sales Representative**, ABC Retail Co. and DEF Store (2007 to 2010): Leveraged strengths in persuasive communications and consultative sales to earn a reputation as a top sales performer for both retailers (including multiple top 10 rankings out of a 100-member sales force).

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## TECHNOLOGY SUMMARY

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**Certifications:** CompTIA A+, HDI Help-Desk Certified

**Systems:** CICS/ISPF/Mainframe, Unix, Windows 9X/NT/2000/XP/2K3, Novell NetWare, Mac OS

**Databases:** Oracle, ADB2, Relational Databases

**Languages:** Visual Basic, SQL, HTML, ASP, CSS, C++, CGI, Perl, Java

**Software:** MS Project, MS Visio, MS Office, Lotus Notes

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## IT EXPERIENCE

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ABC COMPANY, Somertown, MA

**Help Desk Analyst / Intern**, 2009 to 2010

Handled technical troubleshooting within an enterprise environment, including system crashes, slow-downs and data recoveries. Engaged and tracked Priority 1 issues, with responsibility for the timely documentation, escalation (if appropriate), resolution and closure of trouble tickets.

*Selected Contributions:*

- Researched and developed knowledge-base articles for Lotus Notes issues, resulting in an increase in first-call resolutions of 20 additional calls per week that saved company \$57K annually.
- Exceeded issue-resolution targets and achieved exemplary customer satisfaction scores, consistently scoring between 95% and 100% on all calls (outperforming average of 90%).
- Handled 30+ technical/mission-critical calls daily and consistently met high service standards.

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**AVAILABLE FOR RELOCATION & TRAVEL**

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