



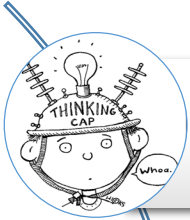
Module 1.1: Make Your Resume Stand Out

(Pre-reading) – Bring your questions to the Zoom workshop!

Computational Sciences



Overview



Co-op Resume Sections with focus on Technical Sections



Accomplishment Statements and Competency



Use of GenAI with Resume Writing

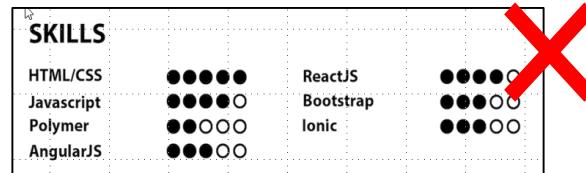


Technical Accomplishment Statement Examples

Co-op Resume

Resume

- A resume is a summary of your qualifications -- training and experience -- **relevant to the job** you are applying to.
- **Purpose: To secure a job interview NOT the job!**
- Two main types:
 - Chronological --- most common where experience is listed by recency, i.e. most recent experience comes first --- reverse chronological order
 - Functional --- group by skills (i.e. functions); to break free from restrictions of a chronologically ordered resume in order to spotlight the relevant skills which may be scattered throughout a chronological resume
- **Don't** use infographics for a technical resume



SKILLS			
HTML/CSS	●●●●●	ReactJS	●●●●○
Javascript	●●●●○	Bootstrap	●●●●○
Polymer	●●○○○	Ionic	●●●○○
AngularJS	●●●○○		

- Write most sections in bullet points. Keep number of bullets in a “paragraph” to 4-7
- In Canada, a resume and a CV (curriculum vitae) are different:
 - Resume: 1-2 pages for jobs not related to academia
 - CV: unlimited pages for academia, or graduate/professional schools; focus on publication

A Tale of Two Readers

Your resume has 2 types of readers: human and machine (ATS – Applicant Tracking System). Their needs and preferences are often contradictory.

Human	ATS
Attracted to visual design (space, columns, typography, icons)	Hard to parse graphics, charts, tables, fancy bullet points, elaborate designs
Can handle ambiguity in the English language – creative/related word choice*	Programmed to look for specific keywords, acronyms and the frequency of occurrence
Prefer simple sentences for speed reading; 1-2 lines per bullet	Don't care if a sentence is long and dense
Font – font size must promote speed reading (usually size 10-12); agnostic to font type as long as it is professional	Use basic font – Arial, Calibri, Cambria, Garamond
Attracted to design-centric templates such as those from Canva, Figma, Overleaf	Most common - .docx, .pdf. Avoid .pages, .odf. Some ATS don't like .pdf; follow document upload instructions
Can recognize applicant's personality and style, and uniqueness and difficulty of projects	Not sentient; not yet able to rate complexity of projects and achievements

* A human reader would recognize “Adobe Creative Cloud” but an ATS would look for “Photoshop”; similarly, a human reader is fine with “JS” and “What I have Done” but an ATS may look for “JavaScript” and “Work Experience”

Possible Sections of a Resume

These are possible sections; you don't need to include all of them. Too many sections will make the resume choppy – try to limit to 5-6 sections.

- **Technical Skills** --- this is a summary and **replaces the “Objective”** section of a typical non-technical resume
- **Technical Work Experience** (ideally after your first Co-op placement or if you have paid programming/QA experience outside Co-op)
- **Technical Projects** (could have separate sections for Academic/Personal/ Hackathon Projects; especially if you have 2+ projects in each category)
- **Technical Extracurricular Activities** (Hackathons, Online Courses, Technical Volunteer Work; may merge with the “Technical Projects” section, which is unpaid technical experience)
- **Additional Work Experience** (non-technical work experience)
- **Volunteer / Community Involvement Experience** (non-technical)
- **Education:** Scholarships & Awards; specify your **start and expected grad date** and include your time in Co-op; put this section at the end for your Co-op resume
- **Activities / Interests** (show that do things outside of coding)

Work Experience & Volunteer Experience

- Create **two** separate sections
 - work = paid
 - volunteer = unpaid
- Include non-technical experience and accomplishments to demonstrate **transferrable skills in leadership, communication, and teamwork**:
 - Food Server, Bus-person, Barista (customer service)
 - Tutor, Teaching Assistant, Camp Counsellor (leadership and communication)
 - Retail sales, Grocery Clerk (organization, communication)
 - Cadets, Girl Guides (team work, leadership)
- Use past tense (unless you are still working there)
- Make sure grammar and structure parallelism is observed in your sentences

Non-Technical Experience

- Has a lot of values in demonstrating your **soft skills** such as communication and leadership skills. You may refer to these experience in your cover letter and interview
- **KISS – Keep It Short, Sweet and Simple:** can group and provide one title entry when the work is similar and does not have direct relevance to your target job search area of interest

Starbucks (Aug 2024-present) / Tim Hortons (May-Sep 2023) / Bubble Tea House (Oct 2022 – Apr 2023)

- Promoted to shift leader after 2 months at Starbucks
- Crafted customizable drinks outside of the regular drink menu

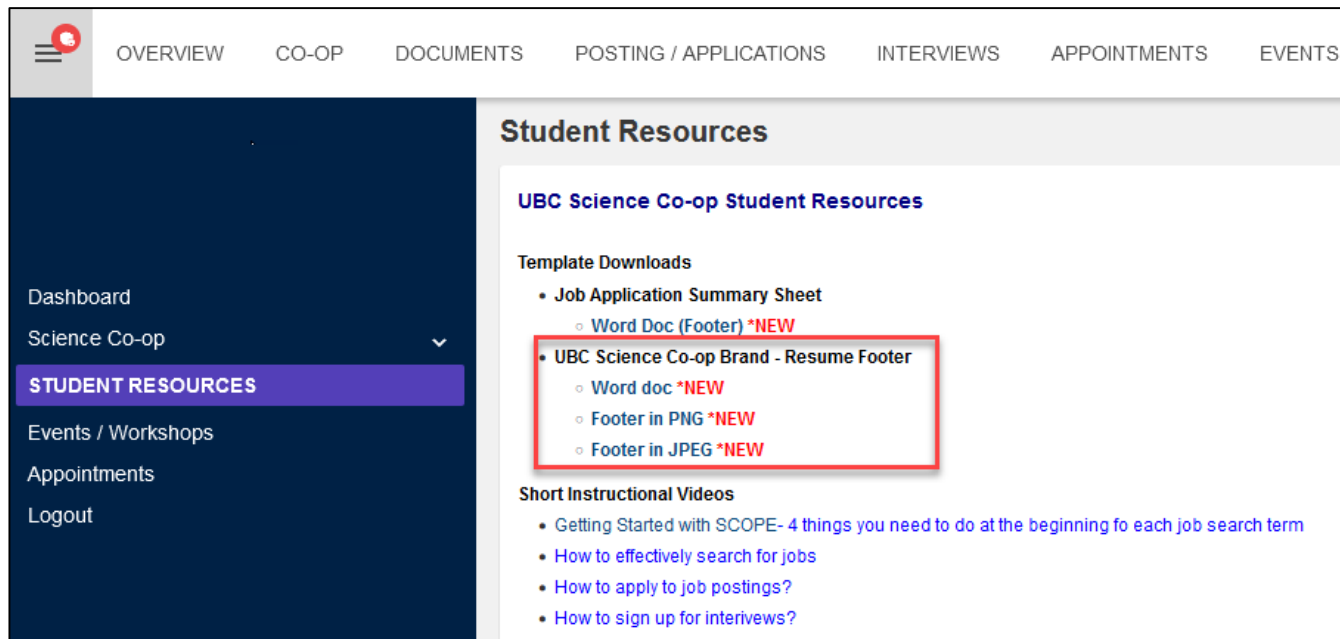
- Be **Bold, Quantifiable & Specific:** focus on the outcome and not the task
 - **Close up the store** -> Entrusted with closing up the store by tallying the sales of the day and securing the premise before lockup
 - **Fold clothes** -> Ensured inventory is processed, priced, and displayed to facilitate store sales
 - **Answered customers inquiries** -> Drove sales through conversation engagement, suggestive selling and product knowledge sharing with customers

Co-op Resume

- Do **not** include your physical address or city; too much private info
- Do **not** include your picture; save that for LinkedIn
- If you use colour on your resume, make sure there is high contrast (e.g. black, deep blue). Sky blue and charcoal grey may look good on screen but may not print out well on a black and white printer
- An “Objective” section is not needed (until you have a few years of industry experience and have a clear career goal/preference); substitute with the “Technical Skills” section

Co-op Branding

- UBC Sci Co-op is a brand that employers look out for, so use it even when applying outside of SCOPE
- Footer JPEG or PNG is found in SCOPE under “Student Resources”



John Smith

johnsmith@gmail.com

123.456.7890

[github/ijismith](https://github.com/ijismith)

Technical Skills

Programming Language: C++, Java, JavaScript, Python, TypeScript
Tools: Git, JIRA, Selenium

Technical Projects

Glucose Monitor (Hackathon)	Apr 2024
<ul style="list-style-type: none">• Desc of project• Accomplishment statement 1• Accomplishment statement 2	
To-Do List (Academic)	Sep-Dec 2023
<ul style="list-style-type: none">• Desc of project• Accomplishment statement 1• Accomplishment statement 2• Accomplishment statement 3	
Rubik's Cube Scrambler (Personal)	Aug 2023
<ul style="list-style-type: none">• Desc of project• Accomplishment statement 1• Accomplishment statement 2	

Work Experience

Tim Hortons	Jun 2024-present
<ul style="list-style-type: none">• Accomplishment statement 1	

Education

University of British Columbia	Sep 2022-May 2027
2 nd year Bachelor of Science, Major in Computer Science	
<ul style="list-style-type: none">• Bill Aiello Memorial Award in Computer Science (2023) --- awarded for best combining academic excellence with leadership, community service, or volunteerism• Specialized courses: Internet Computing, Machine Learning, Cybersecurity	

This is a bird's eye view of how a typical co-op resume looks like.

Accomplishment Statements

Accomplishment Statements

- A resume is a marketing tool to sell YOU. You need to convince your reader with past examples that you have the skills to do their job
- Portray yourself as a candidate who can bring impact and make a difference with your past accomplishments
- Lead with strengths, start with an **action verb** (check sample list in Canvas), be specific in each bullet point
- A good Accomplishment Statement uses the **SAR structure**:
 1. The **S**ituation (problem, opportunity or issue)
 2. What **A**ction you took
 3. What **R**esults you actually accomplished
- Accomplishment statements are substantiated with **facts, not adjectives**

Accomplishment Statements

Level 1: Basic – describe the duties

Level 2: Skill – include the skills used to do the task

Level 3: Accomplishments – show your achievement and competency level in the skill

Level 3 Accomplishment Statements

- Accomplishments are often quantified by numbers, e.g.
 - Reduced processing time from 3 hours to 2 hours
 - Reduced page refresh time by 35%
 - Increased site-hit by 15%
 - 500 downloads of the app in AppStore in the first month of launch
- Sometimes, it is hard to quantify accomplishments, especially for school projects. If so, focus on showing your **level of competency in a skill**, e.g.
 - “Developing a program in microservices” shows higher competency than “developing a program in modules”
 - “Setting an SQL database that prevents injection” shows higher competency than “Setting up an SQL database from ER diagram”

What is Competency?

- Competency = proficiency in a skill; show whether you are at beginner, intermediate or advanced level **through the techniques you have used**

Competency for Starters	Higher Competency
Solving differential equations	Applying linear approximation
Iterating through an array	Traversing a tree
Setting up a webpage using HTML tags	Writing a webpage with JavaScript
Installing OS on a computer	Setting up a Linux server

Show Competency Through Techniques Used

While all three projects are about setting up webpages, they show progression and deepening of skills. Employers would like to see your advancement in skills in the projects that you do.

- Project A: used HTML and CSS to style webpages
Comments: this is a minimally level 2 accomplishment statement
- Project B: defined breakpoints, fluid grid and included flexbox to facilitate responsiveness of webpages; verified with responsive checker tool
Comments: breakpoints, fluid grid etc., are some standard techniques (level 2) to achieve webpage responsiveness
- Project C: optimized loading speed of responsive webpages by implementing caching and minification; used Google PageSpeed Insights to identify and reduce render-blocking JS; used mobile-first principal when testing responsiveness of webpages
Comments: demonstrates higher competency with the techniques used to achieve faster page load (level 3); shows that candidate has more in-depth knowledge about webpage responsiveness

How to Describe Your Projects with Accomplishment Statements

- Write 2 to 5 accomplishment statements in entry of the Technical Project, Work Experience and Volunteer Experience sections (not needed for Interests section)
- Give context/English description the WHO/WHAT; typically in first bullet
- Then explain the **HOW and WHY** in technical keywords. Don't just list out the keywords. **Keyword stuffing is a flag that ATS has been programmed to identify**
- The accomplishment statement is likely not at level 3 if it contains just a list of technical keywords. If a non-technical person understands the write-up, then it is likely an English desc and missing the technical implementation. (Bullet 1, which gives the context of the project, is usually an English desc)
- A short example of a project written in level 3 accomplishment statements:

Retrace App – Fullstack Key Location Tracker ([Git link](#))

Mar-Apr 2024

- Leveraged OOP with Java to develop 6 user stories and achieve 100% unit test coverage (CI/CD)
- Realized end-to-end data persistence (JSON save/load) and documentation for a key tracker with GUI
- Created high-fidelity wireframe mock-ups, personas, journey maps and storyboards to fill gaps in human-centred UI/UX

Checklist when Writing Accomplishment Statements

- Don't keep describing your multiple projects in the format of “frontend was written in React and backend in Node” (level 2 accomplishment statements); otherwise, you are not differentiating your skills or showing your technical progression/improvement (aim for level 3)
- Avoid dense sentences that pack more than 4 ideas in 2 lines. Break up into 2 bullets or use semicolon to improve readability
- Avoid weak action verbs such as: learn, responsible for, gain experience in
- Avoid unnatural (aka GenAI) verbs, e.g. orchestrated, architected, championed
- Adjectives are subjective, so substantiate them with specifics:

Original: *Write detail-oriented bug reports*

Adjective without specifics

Revised: *Designed and executed manual tests in the networking and UI layers; tracked defects in JIRA with detailed screenshots, video clips, environment setups, speculation of possible causes of defects, and verified software fixes*

Focus: Technical Sections –
Technical Skills
Technical Projects
Technical Extra-Curricular

Technical Skills Section – Example 1

Technical Skills

Programming:	Java, C/C++, Haskell, Python*
Tools/Environment:	Eclipse, JIRA, GitHub, LAMP*
Testing:	JUnit, GDB, TDD, writing test plans
Web:	HTML5, CSS, JavaScript, Node.js

* currently acquiring

Try to have no more than 1/3 of your technical skills listed as “currently acquiring”; any more than that can reduce your credibility.

Do not include:

- Windows or MacOS if it means your computer runs on those OS
- Microsoft Office (unless Excel is useful to your prospective job)
- Typing speed

Technical Skills Section – Example 2

Technical Skills

Programming	Java (4 yr), C/C++ (3 yr), Go
Tools/Environment	Eclipse (3 yr), JIRA (3 yr), Github (3 yr), LAMP (currently acquiring)
Testing	JUnit, GDB, TDD, writing test plans
Web	React.js

Choose this format only when the time that you have acquired the skill is long enough to look decent on the resume. If every skill has been learnt for only 1 or 2 terms, then do not use this format.

Technical Projects

- **Technical Projects:** one of the most important factors in successful job search (particularly for WT1)
- Employers like to see **Personal Technical Projects** as they demonstrate:
 - passion for programming and potential
 - programming experience outside the mandate of school
 - self-motivation & willingness to take initiatives
 - start to use GitHub to store and share your (school and personal) projects
- Multiple projects should indicate progression in complexity
 - e.g. from Pac-Man to a Runner game, to players on multiple devices
- **Personal Project Examples**
 - 2-way snake games on two different devices
 - An NHL news feed that floats on top of all applications
 - Discord bot message broadcaster over multiple servers
 - Fix bugs in open source projects
 - Co-op online job application tracker

Technical Projects

- **Must include Month Year** to show how current the project is. List projects in **reverse chronological order** (list projects with the most recent end date first; when two projects have the same end date, list the one with the more recent start date first)
- Write in accomplishment statements
- Typical format

Project Title | (project type) | *<tech skills used>*

Start Date – End Date

- Context: Non-technical project description
- Action-Result: What did you do? What skills were applied? How? What were the outcomes?
- Action-Result: What did you do? What skills were applied? How? What were the outcomes?

Project type: academic | personal | hackathon | volunteer

Technical Projects: Examples

- **Organized by projects** (most popular: recommended)

Geotagging of Photos Stored on Android Phones

Sep - Dec 2023

- Extracted GPS location of photos by deciphering source file with a JSON parser
- Extended an existing open source project by adding a feature that allows users to doodle on photos; feature written in PHP and Objective-C
- Skills: Android, Open Source, JavaScript, PHP

Chronic Kidney Disease Prediction Model (academic)

Jun - Aug 2021

- Created a prediction model trained on a dataset in R, containing attributes of a person's biological information and health based on medical tests to determine if a new patient is likely to develop chronic kidney disease (CKD)
- Used data science libraries like tidyverse, ggplot2, etc. to read, clean and wrangle, analyze and visualize data, and summarize and visualize classification analysis
- Trained with the health records for patients with and without CKD, achieving 98 % accuracy in predicting CKD

- **Organized by programming languages** (when you have many small projects)

Java Programming Projects

- Simulated an FTP server to allow encrypted file transfer with error bit checking (personal, Sep 2024 - Present)
- Designed and implemented a database tool using Oracle and DBMS to store music albums (academic, Jan - Apr 2024)

Python Programming Projects

- Wrote a Tic-Tac-Toe game that would recognize a stale state (personal, Aug 2024)
- Implemented a Rolling Dice with a touch interface (personal, July 2024)

Technical Extra-Curricular Activities

Hackathons & Coding Competitions

- nwHacks, Major League Hacking (MLH)
- Devpost --- has cash prize and different entry level and different software areas
- Google CodeJam (discontinued in 2023, problem archive found [here](#))
- ICPC Programming Competition

Online Learning Resources

- CodeChef.com --- a non-commercial programming community
- Project Euler --- mathematical/computer programming problems
- Udemy, edX, Codecademy, LinkedIn Learning

Data Science and ML

- Kaggle.com --- data prediction competitions and datasets for learning/projects
- Drivendata.org --- for solving data related problems for non-profits
- MachineHack --- open online hackathons, learning resources and datasets
- DataHack Analytics Vidhya --- data science, ML hackathons

UBC Student Club and Volunteer Opportunities

- CTF Maple Bacon, Blockchain, various [Engineering Design Teams](#)
- UBC Emerging Media Lab, Visual Cognition Lab
- CS Dept's GIRLsmarts4tech

Use of GenAI with Resume Writing

Preliminary Considerations

- Data security --- resume and cover letters contain personal data that will be stored on servers outside of Canada, and used to further train the models

Tool	Does it require personal information for signup?	Does it protect personal information?
⚠ Bing Chat (Consumer) aka Copilot	✅ Students can use it without authentication.	❌ No, it will share information entered into the tool outside Canada.
❌ ChatGPT	⚠ Students would need to sign up using a phone number and email address.	❌ No, it will share information entered into the tool outside Canada.

Source: <https://ai.cctl.ubc.ca/privacy-impact-assessments-for-generativeai-instructional-use-at-ubc/>

- Employer opinions
Employers have said that they have noticed a rise in GenAI-produced applications. Those applications are not necessarily eliminated, but they need to demonstrate responsible usage of GenAI, i.e. GenAI is used to assist in the resume writing process instead of having GenAI to do the heavy-lifting of the work

Comparing Resumes to Job Descriptions

GenAI can be helpful in analyzing a job description and identifying skills or experience your resume is missing.

Possible prompts:

- Compare the job description to my resume and identify missing areas
- What are strengths and weakness of my resume compared to the job description?
- Suggest improvements to the resume based on the job description.
- What skills should I add to my resume to be qualified for this job?*

***Don't add skills you don't have!**

Missing qualifications based on the job description:

1. **Specific Emphasis on C++ and Qt:** The job description emphasizes C++ development for both back-end and front-end, along with Qt. The resume mentions C++ but does not specifically highlight experience with Qt.
2. **Lack of Mention of Spatial Data and FME Technology:** The job description focuses on spatial data and the FME technology. The resume doesn't explicitly mention experience with spatial data or familiarity with the FME platform.
3. **Limited Exposure to Back-end Development Tools:** The job description mentions tools like Visual Studio, SCons, and Git for back-end development. The resume does not specify experience with these tools in a back-end development context.
4. **Missing Exposure to Specific Toolkits and Libraries:** The job description lists several toolkits and libraries (Qt, Boost, STL, cURL, OpenSSL, Xerces, ICU, GEOS) that the candidate should be familiar with. The resume does not explicitly mention experience with these.
5. **Limited Exposure to Cloud Services:** The job description mentions working with cloud services like AWS, Azure, and Dropbox. The resume does not indicate specific experience with these cloud platforms.

An AI-Generated Resume

GenAI Strengths:

- Providing *inspiration* for level 3 accomplishment statements

GenAI Weaknesses:

- Can be very wordy, bloated
- May not follow typical resume conventions (e.g. bolded headers, multiple sentences in bullet point.)
- Can invent information (such as the fake job title in this example)
- Can overly exaggerate your achievements



You

Improve this resume portion:

Java Music Player App

Jan 2023 – May 2023

- Developed a desktop music application using Java
- Created a GUI with Swing
- Integrated data persistence (JSON), allowing for saving and loading previous versions
- Designed test suite using JUnit testing framework



ChatGPT

Java Music Player Application | **Software Development Intern** | Jan 2023 – May 2023

- **Software Development:**

- Spearheaded the complete **development lifecycle of a cutting-edge** desktop music application using Java, demonstrating expertise in coding, debugging, and version control.

- **Graphical User Interface (GUI) Design:**

- Crafted an engaging and user-friendly GUI with the Swing framework, focusing on enhancing the application's visual appeal and user interaction.

- **Data Persistence Integration:**

- Implemented a robust data persistence layer using JSON, enabling seamless saving and loading of user preferences and playlists. **This feature adds a personalized touch, allowing users to effortlessly access their previous settings and configurations.**



You

Now make it less wordy



ChatGPT

Java Music Player App | Software Dev Intern | Jan 2023 – May 2023

- **Developed:** Desktop music app in Java.
- **Designed:** User-friendly GUI with Swing.
- **Integrated:** JSON-based data persistence for saving/loading.
- **Implemented:** JUnit testing suite for functionality assurance.

An AI-Generated Resume

GenAI Weaknesses (cont'd):

- Does not take into account possible improvements on the action verb used.
- E.g. We do not recommend using “learned” as a strong action verb. ChatGPT doubles down on it in a way that does not actually improve the content.
- This example also overuses the “demonstrating & showcasing” of competencies, which would be better in a cover letter.
- Tends to **provide more adjectives instead of specifics** as way of improving a resume statement
- Unsubstantiated adjectives aren't achievement



You

Improve this resume:

Google Classroom Clone

Jan 2023 – May 2023

Created a clone of the education website Google Classroom.

Learned Node.js, MySQL and structures of Relational Databases for the backend

Learned Bootstrap, as well as improved my skills with JavaScript, HTML and CSS

Hosted the website temporarily on a Raspberry Pi web server running Apache.

Eventually moved to a Digital Ocean server



ChatGPT

Google Classroom Clone | Jan 2023 – May 2023

• **Project Overview:**

- Developed a functional clone of the Google Classroom education website, showcasing a practical understanding of web development concepts and technologies.

• **Backend Development Skills:**

- Acquired proficiency in Node.js and MySQL, gaining insights into the structures of relational databases to power the backend of the application.

• **Frontend Enhancement:**

- Enhanced frontend skills by learning Bootstrap and refining proficiency in JavaScript, HTML, and CSS, ensuring a modern and responsive user interface.

• **Server Configuration:**

- Initially hosted the website on a Raspberry Pi web server running Apache, demonstrating adaptability and resourcefulness in unconventional hosting environments.

Writing Better Technical Accomplishment Statements

Learn from Other Sources

- Read through different job descriptions from Indeed, LinkedIn etc.
- Know more about different roles (e.g. fullstack developer, devOps developer) --- the tools, frameworks, key concepts and skills related to those roles
 - Sample resources: Simplilearn.com, GeeksforGeeks.com
 - Job Bank of Canada
- Use a resume checker/GenAI to match your resume with the keywords in the job description; but don't adopt everything it suggests
- Get feedback from recruiters you meet at career fair, employer events
- Exchange and critique your friends' resume and vice versa
- Have another round of resume review with your Coordinator!

Learn from an Existing Job Desc

Fullstack Dev

- Implement cross platform web-based features, user interfaces and Node.js-based services for content safety platforms
- Strong JavaScript/HTML/CSS frontend engineering experience and strong familiarity with key concepts including asynchronous programming, closures and types, layouts, specificity, animation, cross browser compatibility and accessibility
- Deep understanding of the underlying design philosophy and implementation of common web frameworks including React/Vue/Angular
- Deep familiarity and experience with common web compilation and bundling frameworks, including Webpack/Rollup/BaBel/AST/Gulp
- Good understanding of frontend-backend multi-tier application architecture and protocols, familiarity with product and SDLC
- Demonstrate expertise in deep optimization of end user experience, stability and scalability, code modularity and rendering latency

Learn from an Existing Job Desc

SW Tester

- Work closely with the business SME's and the vendor to create and modify test cases and test scripts.
- Plan and execute software functional testing and systems integration testing, recording results and communicating with the QA Lead and/or Project Manager on testing progress.
- Participate in defect triaging.
- Prepare regression test suite and UAT scenarios.
- Participating with backend and API testing and related testing tools
- Working with team members to create test scripts, execute testing and log defects. Support and maintain Test Tools including TestRail.
- Provide written reports on work completed and test reports. Escalate road blocks proactively to leadership.
- Communicating with developers, business analysts, less experienced testers and project managers.
- Troubleshooting skills on windows OS, web and client/server applications.

Learn from an Existing Job Desc

UX Designer

- Providing expertise in developing and executing online user experience/content strategy, ensuring incorporation of best practices in user experience.
- Developing processes and leading prototyping activities to define and test usability requirements , and ensuring that specifications and new features follow standards/best practices.
- Designing information architecture, wireframes, page templates and navigation, functional specifications; identifying opportunities for new functionality and connectivity.
- Providing feedback and recommendations on user experience through analysis of web analytics, visitor feedback, performance metrics, and other tools.

Learn from an Existing Job Desc

Data Scientist

- Identify, clean, and integrate large sets of structured and unstructured datasets from disparate sources for use in advanced analytical models and products
- Use advanced ML processes to convert data from non-functional forms, such as unstructured text or scanned image text, to functional forms ready for use in further ML models
- Use advanced ML models to identify patterns, trends, and opportunities that can make predictions or reduce workload to make a significant impact across various domains
- Proficiency with using advanced machine learning methods, machine learning software packages, and manipulation of large datasets.
- Knowledge and experience in statistical and data mining techniques including but not limited to: GLM and other regression, Bootstrapping, Random Forests, Boosting, Trees, text mining, social network analysis, simulation, scenario analysis, clustering analysis, decision trees, neural networks, and other methodology.
- Computer code, querying databases, and using statistical computer languages: Python, SQL, R, SAS and others
- Visualizing/presenting data for stakeholders using: R, ggplot, Tableau, PowerBI, Matplotlib, D3, Periscope/Sisense or other

Government of Canada – Job Bank

- Get inspirations on the duties/tasks of a job from the government's Job Bank database:

<https://www.jobbank.gc.ca/trend-analysis/search-occupations>

- They are not written in accomplishment statements but outlines main duties and have other useful information

Software engineers and designers

Job duties

- Collect and document users' requirements and develop logical and physical specifications
- Research, evaluate and synthesize technical information to design, develop and test computer-based systems including mobile applications
- Develop data, process and network models to optimize architecture and to evaluate the performance and reliability of designs
- Plan, design and coordinate the development, installation, integration and operation of computer-based systems including mobile applications
- Assess, test, troubleshoot, document, upgrade and develop maintenance procedures for operating systems, communications environments and applications software
- May lead and coordinate teams of information systems professionals in the development of software and integrated information systems, process control software and other embedded software control systems.

- Explore related jobs from the resources at the bottom of each job

Related job titles

Here are some other related job titles that are found in the same occupational category (NOC 21231), and a list of similar occupations:

- Application architect
- Cloud infrastructure engineer
- Cloud operations engineer
- Computer software engineer
- Embedded software engineer
- Mobile development lead
- Site reliability engineer
- Software and information technology project manager
- Software architect
- Software design engineer
- Software design project manager
- Software design verification engineer
- Software designer
- Software project manager
- Software systems integration engineer
- Software technical architect
- Software testing engineer
- Telecommunications software engineer

Similar occupations ⓘ

- [Computer engineers \(except software engineers and designers\)](#)
- [Database analysts and data administrators](#)
- [Web developers and programmers](#)
- [Computer and information systems managers](#)
- [Electrical and electronics engineers](#)
- [Information systems specialists](#)
- [Web designers](#)
- [Software developers and programmers](#)
- [Computer systems developers and programmers](#)
- [Information systems testing technicians](#)

Resume Checkers

- Online software that compares the keyword match rate of your resume against the job description
- Popular resume checkers:
 - Jobscan
 - Resume Worded
- They may identify elements on your resume that may not be parsable by ATS
- They can make suggestions and alternatives
- Data privacy can be of concern
- May have a subscription fee
- GenAI are replacing their function, or are being incorporated in them

Technical Statement Examples

Ex. 1: Be Concise but Not Choppy

Chinese checkers

- Implemented in Scheme *Don't call everything an AI when it is not!*
- AI plays against a human opponent *Missing project date*
- Brute force program with generative recursion, arbitrary arity trees and backtracking search *Hard to interpret without an action verb*
- Able to continue playing to correct end state even if winning is no longer possible *"Correct" can be a verb or an adjective*

Revised:

Chinese Checkers Game (Racket)

Sep – Nov 2023

- Developed a single-player game in Racket (similar to LISP) which competed against an algorithm that uses brute force with generative recursion, arbitrary arity trees and backtracking search to deduce its next move *Outlined the algorithm to achieve the game play*
- Program can continue playing correctly even if win state was unreachable

Ex. 2: Provide Details/Specifics

2 Player Snake

- Implemented in Scheme
- Player versus player

No implementation details. This could have been describing a chess game, or a Connect Four

Missing project date

REVISED: 2-Player Snake Game

Optional: add supplementary information when the reader may not be familiar with it

Nov 2023—Aug 2024

- Originally written in Racket (a derivative of LISP) as a class project, recently rewrote in Python
- Expanded from single player to multi-player
- Refactored snake object into a class with parameterized controls to allow the independent control of multiple snake instances
- Implemented new win states to allow interactive competitive gameplay

It would be even better if the “technical how” is explained

Provided details on the “accomplishment” of the refactoring

Ex. 3: Don't Provide Just a List of Technical Keywords without Showing “How” and “What”

Developer Intern

Sep 2023 – Jan 2024

AnalysisWorks, Vancouver, BC

- Specializing in Health Care Data, AnalysisWorks provides industry leaders the information they need to make the right decision.
- Built and tested graph/chart implementations displaying such data ([JavaScript](#), [Flot.js](#), [jQuery](#), [AJAX](#)).
- Server-side web programming in ASP.NET.

Not leading with
action verb

This is a list of keywords
without showing how the
skills are used

REVISED:

Developer Intern

Sep 2023 – Jan 2024

AnalysisWorks, Vancouver, BC

- AnalysisWorks specializes in the analysis and presentation of Health Care Data.
- Managed databases by [creating/updating stored procedures and tables in MySQL](#), as well as supported monthly data refresh cycles.
- Dealt with millions of data records, [created interactive graphs and charts with Flot.js](#), [utilized jQuery and AJAX to create dynamic pages](#).
- [Performed server-side data queries](#) and testing in ASP.NET.

Providing the specifics about what is
meant by “managed databases”

Showing what is accomplished with
a skill, e.g. create dynamic pages
with jQuery and AJAX

Starting
bullet with
action verb

Indicating experience
(competency) in server-side
programming is in data queries

SCIENCE CO-OP
WORKSHOPS

Ex. 4a: Give Details to Show Competency

How is JavaScript used in the project?

CustHOMEr Service – JavaScript, HTML, CSS, React, Azure, AR.js

BizHacks 2024

- Developed a Blue Shirt (Customer Assistant) chatbot and AR product viewing application for *BestBuy* through integration of Microsoft Azure (Azure Bot Service) and AR.js
- Implemented project into presentable faux BestBuy website using **HTML parsing, React, JavaScript, CSS, and HTML**

This is a list of keywords without showing how the skills are used

REVISED:

CustHOMEr Service – JavaScript, HTML, CSS, React, Azure, AR.js

BizHacks 2024

- Developed a Blue Shirt (Customer Assistant) chatbot and an AR product-viewing application for BestBuy by integrating Microsoft Azure (Azure Bot Service) chat-box and machine learning, and by incorporating **AR.js 3D model viewing services using 3D AR models**
- Implemented project into a **responsive** faux BestBuy website using HTML parsing, React **buttons and textboxes**, and JavaScript and HTML/CSS to **dynamically hi-light price table column**

Showing what components are used helped reader assess that candidate's React level is basic

Indicating candidate's skill is beyond that of a static website

Suggesting CSS skills may be beyond simple markup

Being able to use 3D libraries implies candidate has gone beyond the basics

Ex. 4b: Give Details to Show Competency

Insight UBC

- Full stack development project split into four sprints
- Development done with TypeScript and limited libraries
- Enable effective querying of the metadata around campus
- Involve working with courses, prerequisites, post course average and room scheduling

Knowing that the project has 4 sprints may not be irrelevant

Sep – Dec 2023

Why not specifying the libraries?

How? By writing backend code, or by SQL statements?

REVISED:

Query UBC Campus Information (pair programming)

An English desc that doesn't show tech ability/achievement; should be 1st instead of last bullet

Sep – Dec 2023

- Built a website from scratch to enable tasks such as searching course information, room and building information around UBC campus
- Opened and read data from zip files and parsed raw JSON data using nested callback functions and asynchronous promises
- Programmed a TypeScript query engine that takes user inputs from dropdown menus and builds SQL queries to handle different query requests --- requires data computation such as calculation of averages and aggregations in order to answer queries

Provided the specifics of the implementation

Provided details about what the query engine is about

Showing that the queries are not straight-forward SELECT statements

Ex. 5a: Show, Don't Tell (Show How Things are Implemented/Done with the Tech Skills)

Software Engineering Design Team Member (UBC Launch Pad)

Oct 2023 – present

- Give an image of an ingredient list, implemented ingredients list, reading and parsing for an carbon footprint calculator app

Lack of parallelism in sentence

What language is this project in?

Flood-Fill An Image Using Breadth-First and Depth-First Search

Oct 2023

- Implemented a flood fill algorithm on a given image that performs BFS/DFS traversal of points starting from a randomly generated set of center coordinates in the image

A super long sentence that is hard to recognize the break points for ease of reading

What language is this project in?

REVISED:

Software Engineering Design Team Member (UBC Launch Pad)

Oct 2023 – present

- Converting, reading and parsing a given base64 image of an ingredient list to implement a carbon footprint calculator app in Python-Flask.

Leading with clearer action verbs, fixing grammar problems, providing attribute of the image, indicating language used

Flood-Fill An Image Using Breadth-First and Depth-First Search

Oct 2023

- Implemented in C++ a flood-fill algorithm on a given image by performing BFS & DFS traversal of points, using a randomly generated set of coordinates within the image as start point.
- Implemented function objects to determine the color of each pixel, and used stack and queue structures to store the pixels for the BFS and DFS fills.

Breaking up the sentence to ease reading

Removing unimportant detail for clarity

Providing implementation details in a separate bullet to ease understanding

Ex. 5b: Show, Don't Tell (Show How Things are Implemented/Done with the Tech Skills)

CTF Competitions

CTF is not a commonly recognized name yet

Oct 2021 – present

- Wrote scripts to solve challenges under pressure
- Reversed engineered stripped binary programs
- Identified and exploited vulnerabilities in applications

What kind of script? What type of challenges?

Verb (reversed engineered) and adjective (stripped) not clearly delineated, decreasing sentence readability

Overly simplifying tasks and achievements to an extent that nothing substantial is really said

REVISED:

Explaining what CTF is

Capture the Flag Competitions (Cybersecurity and Forensics)

Oct 2021 – present

- Reverse-engineered a stripped binary program using Ghidra and Radare2
- Performed dynamic analysis and debugged exploits using GDB
- Identified vulnerabilities in binary applications and web services
- Defeated common exploit mitigations such as position independent executables, address-space layout randomization, stack canaries, and relocation read-only
- Created writeups to explain vulnerabilities and exploit techniques used in each challenge

Rewritten for clarity

"Dynamic analysis" is the forensic skill/competency

"Binary applications and web services" is the experience (competency)

To be able to explain technical concepts in writing is an asset

This list allows readers to assess the cybersecurity competency of the candidate

Ex. 5c: Show, Don't Tell (Show How Things are Implemented/Done with the Tech Skills)

Software Engineer Co-op, Back-end Intersect

A list without detailing how they are being used in the project

Jan 2020 – Apr 2020
Toronto, ON

- **Technologies:** Java, Spring Boot, Kibana, Elasticsearch, Kafka, Pivotal Cloud Foundry, Spring Cloud
- Transitioned from the product strategist role into the software engineer role on the same product, leveraged product knowledge to work with third-party API providers to define product needs.
- Developed microservices from scratch for a large scale product with over 500,000 estimated unique users at launch.
- Improved code resiliency by introducing and implementing circuit breaker pattern to all user facing microservices.

A promotion is nice but may not worth being the 2nd bullet

3rd bullet is a level 3 accomplishment statement

4th bullet has demonstrated competency level in microservices

REVISED:

Software Engineer Co-op, Back-end Intersect

Jan 2020 – Apr 2020
Toronto, ON

- Technologies: Java, Spring Boot, Elasticsearch, GraphQL, Kafka, Pivotal Cloud Foundry
- Developed and deployed three microservices from the ground up integrating a third-party API and developing an additional property search function for a real estate product with over 500,000 estimated unique users at launch.
- Maintained four other search related microservices which utilized Elasticsearch, GraphQL, Kafka, and Spring Cloud Netflix/Config, all continually deployed through Pivotal Cloud Foundry.
- Implemented performance tracking through Kibana for all Elasticsearch related microservices.
- Improved code resiliency by introducing and implementing circuit breaker pattern to all user facing microservices.

The original was not bad. The revision provided even more detail about the specifics of the implementation, and incorporated the list of technical keywords into the bullet description.

CO-OP
OPS

Ex. 6a: From Level 2 to Level 3 Accomplishment Statements

Spotify Plugin

- Implemented user authentication of a Spotify plugin

REVISED:

- Implemented Spotify OAuth authorization code flow which generates authentication tokens to develop a long-running application

User Login

- Implemented a user login system in PHP

REVISED:

- Implemented secure encrypted registration and login system in PHP using password hashing

Storing Data in SQL

- Store data using MySQL

REVISED:

- Used MySQL to create a database structure to store restricted user information and populate data field with more comments using Ajax without refreshing the browser

Ex. 6b: From Level 2 to Level 3 Accomplishment Statements

A* Pathfinding Algorithm

- Constructed a maze using a 2D array filled with object instances which allowed for modularity and efficiency

REVISED:

- Iteratively added neighbouring nodes to the worklist in the order of most to least optimal, which decreases computation by prioritizing exploring nodes that make progress towards target and avoiding backtracking

Discord Bot

- Fixed bugs in MySQL databases

REVISED:

- Fixed bugs that caused deadlocks in MySQL databases by using asynchronous functions

Ex 7: Go Beyond the Basics for 210 Project

Java Music Player App

Jan 2023 – May 2023

- Developed a desktop music application using Java
- Created a GUI with Swing
- Integrated data persistence (JSON), allowing for saving and loading previous versions
- Designed test suite using JUnit testing framework

REVISED:

Java Music Player App

Jan 2023 – May 2023

- Crafted a UI with Java Swing, enabling users to navigate and interact with their music collections
- Integrated the Java.sun.audio package to facilitate audio file playback, enhancing the application's core functionality
- Ensured user experiences across sessions by developing a data persistence mechanism using JSON serialization for user credentials and personal music collections
- Utilized the Test-Driven Development (TDD) methodology, designing test cases with JUnit, achieving 95% code coverage and assuring application stability

Effective Resume Tips

Formatting

- **Clean layout:** white space, consistent font, spacing, etc.
 - Avoid a single word on a line (applies to both resume & cover letter)
 - Avoid having a paragraph that overflows onto the second page
 - Start each bullet with an action verb
 - Period after bullet --- be consistent, either have a period after every bullet, or don't have a period after
- **Reverse chronological order:** list from most to least recent by end date. If two projects have the same end date, then the one with the more recent start date comes first
- **Month and Year:** Be consistent and align; choose either the 3-letter abbreviation or the whole word for the month
 - Eg. Jan – Apr 2015 (preferred), or January – September 2015
 - September should be abbreviated to Sep

FAQs

Should I include skills that I am acquiring/will acquire this term?

- Yes, indicate clearly that you are new to the skill
- Explain it in your cover letter if that skill is a core skill for the job
- Keep revising your resume as your project progresses

Should I include a personal project that I am still working on?

- Include it if you will have made good progress that you could talk about it in a meaningful way in an interview

The reverse chronological ordering of technical projects prevents me from showcasing my strongest project. What shall I do?

- Organize your projects under different headers, such as “Java Projects” and “Python Projects” vs “Hackathon Projects” and “Academic Projects” to try to have your strongest project occupy a more prominent spot; but you need to maintain the reverse chronological order within a section

FAQs

How do I identify my part in a group project?

- You can start the bullet with “Contributions:”, “Specific responsibilities:”

Should I list my scholarship amount?

- It’s more important to explain what you were awarded for, i.e. your achievement
- No need to include the dollar amount

Greer Family Scholarship --- awarded for academic achievement and community involvement in the Computer Science Department

Should I include my high school info?

- You have arrived at UBC, so your high school info is of much lesser value
- You may include your exceptional high school achievement under Awards/Extra-curricular sections
- “Top grade 12 Math student”, recipient of BC Ministry of Education District Scholarship---save space and no need to include these
- Encouragement: start to accumulate your achievement/involvement in university!

Double Check ✓

Make sure you have....

- ✓ Included **Science Co-op footer** (under Student Resources)
- ✓ Used a **professional email**, including your **phone number**. Your email should be the one in Workday/SCOPE for us to confirm your identity with employers
- ✓ Removed your **physical address**
- ✓ Formatted so it's **easy for an employer to speed-read** and is **esthetically pleasing**
- ✓ Formatted so that it is **ATS-friendly** (minimize icons, columns, fancy design)
- ✓ Listed **technical projects** (Academic/Personal), work/volunteer experience in reverse **chronological order** by end date
- ✓ Included **month and year** for every project and experience
- ✓ Added possible **hyperlinks** and the links are noticeable
- ✓ Started each bullet with an **action verb**
- ✓ Checked for **verb tenses** (past vs present) and **sentence parallelism, spelling and grammar**
- ✓ **Echoed keywords** in the job description but don't overstuff
- ✓ **Review document after PDF conversion (unwanted page break, line spacing)**

WHAT'S YOUR NEXT STEP?

Bring your questions to the live session workshop for discussion!