Sparsh Trivedy

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PROFESSIONAL SUMMARY

UBC CS senior (expected **Dec 2025**) with **2+ yrs of SWE co-op and research experience**, building scalable full-stack cloud applications and automation tools that cut manual work and improve accuracy.

EDUCATION

University of British Columbia   Sep 2020 – Dec 2025

B.Sc. Computer Science | *GPA 85.6% (A ≈ 4.0/4.33)*   *Vancouver, BC*

TECHNICAL SKILLS

Languages: Java, Python, C/C++, C#, Go, SQL, JavaScript, TypeScript, HTML/CSS
Frameworks & Libraries: React, Node.js, Express.js, .NET, Django, FastAPI, Pandas, NumPy, Scikit-learn
Cloud & DevOps: AWS, Azure, Firebase, Docker, Git, GitHub, GitLab
Databases & Storage: MongoDB, PostgreSQL, MS SQL Server, AWS S3

EXPERIENCE

Research Assistant   May 2025 – present

University of British Columbia | *AWS, Python, FastAPI, TypeScript, React, PostgreSQL, Auth0*   *Vancouver, BC*

- Architected a **React+FastAPI+PostgreSQL** platform, to *queue quantum-chemistry jobs* on a **Slurm HPC cluster**–enabling **100+ concurrent submissions** with < 1s **latency** and **asynchronous status polling**.
- Engineered an **AWS S3**-backed molecule library with **tagging, notes, and auto-formula population**, to *enable users to search, filter, and organize structures*–**cutting new-job attachment time to** < 2s.
- Integrated **role-based access control**, to *allow admins to create groups* and *manage users, group-admins to manage memberships*, and *members to join and interact*–**enforcing fine-grained permissions** for every action.

Software Engineer Co-op   May 2024 – Dec 2024

AlphaSense | *.NET, C#, TypeScript, React, Python, AWS*   *Vancouver, BC*

- Created **10 validation checks and autofixes**, to *catch and rectify common user mistakes*–identified through support requests–**boosting financial model accuracy** and enabling **seamless model uploads**.
- Developed a shortcut for **splitting and merging earnings tables** with **automated conflict resolution**, to *boost user efficiency*–reducing modification time from ~ 20 **minutes to a single click**.
- Added a changelog-parsing step to the release pipeline *to streamline releases* by grouping changes by epic and posting notes to Slack–**saving engineers** ~ 30 **minutes of manual work per cycle**.

Applied Machine Learning Teaching Assistant   Sep 2023 – Apr 2024

University of British Columbia | *Python, Scikit-learn, NumPy, Pandas*   *Vancouver, BC*

- Automated **answer extraction from** ~ 350 **Jupyter submissions** into a single file by building a parser, *to cut grading time*–**saving graders** ~ 2 **hours per assignment**.

Learning Tech Rover Work-learn   May 2023 – Aug 2023

University of British Columbia | *Python, Django, JavaScript, jQuery, HTML, CSS, SQL*   *Vancouver, BC*

- Redesigned the TA application portal's Django UI, to *improve layout, navigation, and visual cues*–making the interface more **intuitive and user-friendly** and reducing user onboarding time.

Software Developer Co-op   Sep 2022 – Apr 2023

BGC Engineering | *.NET, C#, TypeScript, React, MS SQL Server, Azure DevOps*   *Vancouver, BC*

- Designed an **interactive table** handling thousands of instrumentation records, to *link entries to map locations and support filtering, editing, and new-record creation*–**streamlining data management and navigation**.
- Implemented a **selective data-copying** feature that reused overlapping information from previous inspections, to *avoid repetitive data entry*–**saving users** $\sim 75\%$ **of time per new inspection**.

PROJECTS

ConnectUBC–social platform for UBC students | *MongoDB, Express, React, TypeScript*   May 2025 – Jul 2025

- Built an **AI-powered RAG chatbot** using **Gemini's LLM** and **MongoDB Atlas vector search**, to *enable natural-language queries*–**cutting content-discovery time by** $\sim 70\%$.
- Introduced **Auth0**-based authentication with UBC-email whitelisting and auto-verification, to *restrict access to verified students*–**eliminating manual vetting** and **blocking 100% of bogus sign-ups**.
- Designed a **React profile builder**, to *capture student interests, courses* (via Workday calendar upload), and *residence*–persisted in **MongoDB**–driving a more **personalized feed**.