

CHHAVI NAYYAR

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EDUCATION

University of British Columbia (UBC) <i>BSc, Combined Major in Computer Science & Cognitive Systems</i>	Sept 2022 – Present Vancouver, BC
<ul style="list-style-type: none">• Relevant Coursework: Distributed Systems, Data Structures & Algorithms, Databases, Machine Learning, Software Engineering, Web Development, Cloud Infrastructure• Leadership: Design Director – UBC UX Hub Member – Women in Computer Science, Girls in STEAM	

PROFESSIONAL EXPERIENCE

Teaching Assistant – Human-Centered AI <i>UBC Computer Science Department (CPSC 532C/554C)</i>	Jan 2026 – Present Vancouver, BC
<ul style="list-style-type: none">• Supporting graduate-level instruction in Topics in Artificial Intelligence: Human-Centered AI, facilitating discussions on algorithmic bias, fairness, and human-computer interaction for advanced students• Leading lab sessions and guiding students through practical implementations of human-centered AI concepts, bridging theoretical foundations with real-world applications in ethical AI development• Managing course communications and moderating online discussions, fostering collaborative learning environment and ensuring timely resolution of student inquiries	
Teaching Assistant – Cognitive Systems <i>UBC Cognitive Science Department (COGS 300/303)</i>	Jan 2026 – Present Vancouver, BC
<ul style="list-style-type: none">• Delivering instruction for COGS 300: Understanding & Designing Cognitive Systems, teaching core concepts in cognitive science and intelligent system design to undergraduate students• Contributing to COGS 303: Research Methods in Cognitive Systems, guiding students through experimental design, methodological reasoning, and interdisciplinary research approaches• Facilitating labs, discussions, and assignments to strengthen students' analytical thinking and ability to integrate perspectives from psychology, neuroscience, AI, and linguistics	
Automation Engineer <i>UBC Extended Learning</i>	Sept 2025 – Present Vancouver, BC
<ul style="list-style-type: none">• Built end-to-end automation pipeline using Python and Google Apps Script to transform CSV survey data into structured PDF reports, eliminating 70% of manual processing• Engineered automated notification systems and reminders, boosting survey response rates by 25% through intelligent workflow orchestration• Designed scalable data validation and error handling mechanisms to ensure data integrity throughout the automation pipeline, reducing manual intervention requirements	
Machine Learning Engineer <i>BC Cancer</i>	June 2025 – Dec 2025 Vancouver, BC
<ul style="list-style-type: none">• Engineered unsupervised ML models using Python and scikit-learn to analyze healthcare feedback, improving thematic pattern detection by 40% and enabling data-driven AI deployment strategies• Developed open-source concept mapping toolkit using NetworkX and FastAPI, reducing manual analysis time by 50% through automated qualitative data visualization• Built scalable data pipelines enhancing model interpretability by 35% through advanced clustering algorithms and interactive Plotly visualizations• Collaborated with healthcare researchers and clinicians to translate domain expertise into technical requirements, ensuring ML solutions aligned with clinical workflows and regulatory considerations	
Deep Learning Engineer <i>UBC Computer Science Department</i>	Apr 2025 – Dec 2025 Vancouver, BC
<ul style="list-style-type: none">• Architected VTNet deep learning models using TensorFlow and PyTorch for eye-tracking analysis, achieving 25% improvement in predictive accuracy through mathematical optimization• Orchestrated high-performance computing experiments on Slurm clusters, accelerating model training pipelines by 30% and enabling rapid iteration at scale• Collaborated with research teams to translate cognitive science requirements into technical solutions, demonstrating strong communication with non-technical stakeholders	

Full-Stack Web Developer

UBC Michael Smith Laboratories

July 2025 – Sept 2025

Vancouver, BC

- Designed responsive **TypeScript/React** web application for graduate Biochemistry program, driving estimated **40% increase** in user engagement through user-centered design
- Established **CI/CD workflows** and content management systems, reducing update turnaround time by **30%** and improving accessibility for 200+ stakeholders
- Conducted UX research and usability testing to align website functionality with user needs, implementing feedback-driven improvements to navigation and information architecture

Software Engineer Intern

TechyWeb Solutions

Jan 2024 – Mar 2024

Vancouver, BC

- Developed production-grade **RESTful APIs** in **Python** with comprehensive test coverage, integrating **CI/CD pipelines** via **GitHub Actions** to streamline deployment and ensure code quality
- Collaborated in **Agile teams** using **Git, Jira, and Confluence** to deliver client-facing features, demonstrating ownership and effective communication with engineers, product managers, and stakeholders

TECHNICAL PROJECTS

Your Search Box – Multi-Modal Search Service | *Node.js, TypeScript, React, Next.js, NLP*

Present

- Engineered server-side rendered search platform supporting voice, image, and text inputs using **TypeScript** and **Next.js**, demonstrating mastery of modern frontend frameworks and API contract design
- Architected flexible adapter pattern for headless CMS integration (Shopify/WordPress) with environment-driven configuration, showcasing scalable software design principles

VR Experience Recommendation System | *Python, TensorFlow, Flask, Machine Learning*

2025

- Implemented hybrid collaborative filtering and content-based recommendation engine using **TensorFlow** and cosine similarity, achieving **20–25% improvement** in F1 score and precision metrics
- Built **Flask REST API** with batch inference and query caching mechanisms, optimizing response times for high-frequency requests

Healthcare Concept Mapping Toolkit | *Python, NetworkX, FastAPI, Data Visualization*

2025

- Developed production-ready toolkit for analyzing complex healthcare datasets through concept mapping, MDS, and hierarchical clustering algorithms
- Created interactive **Plotly** visualizations and **FastAPI** endpoints to surface data-driven insights, transforming qualitative research into quantifiable patterns for decision-makers

CourseInsights – Survey Analysis Platform | *Python, Flask, Pandas, Data Processing*

2025

- Built full-stack web application to automate course survey analysis, processing CSV responses into structured PDF reports using **Flask** backend and **Pandas** for data transformation
- Streamlined instructor workflows with intuitive UI, demonstrating end-to-end product development from user requirements to deployment

Webability – Accessibility Widget | *JavaScript, CSS, WCAG/ADA Compliance*

2024

- Developed accessibility widget ensuring WCAG and ADA compliance with features including adjustable font sizes, high-contrast modes, keyboard navigation, and screen reader support
- Designed flexible, user-friendly interfaces with **CSS** to meet diverse accessibility needs while optimizing performance by minimizing JavaScript bundle sizes for fast load times

TECHNICAL SKILLS

- **Languages:** Java, Go, TypeScript, Python, C++, JavaScript, SQL, HTML/CSS
- **Backend & APIs:** RESTful API Design, Express.js, Flask, FastAPI, Node.js, GraphQL, Microservices
- **Frontend Frameworks:** React, Redux, Next.js, Server-Side Rendering, Responsive Design
- **Data & Storage:** SQL (PostgreSQL, MySQL), NoSQL, Cassandra, Elasticsearch, Spark, Data Pipelines
- **Cloud & DevOps:** AWS (EC2, S3), Docker, CI/CD (GitHub Actions), Linux, Slurm, Cloud Architecture
- **ML/AI Frameworks:** TensorFlow, PyTorch, scikit-learn, NetworkX, Plotly
- **Development Tools:** Git/GitHub, Gradle, Jira, Confluence, Agile/Scrum, Test-Driven Development