

CHHAVI NAYYAR

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EDUCATION

BSc (Cognitive Systems and Design), University Of British Columbia, Vancouver, BC Sept 2022 – Present

- Relevant Coursework: Algorithms & Data Structures, Operating Systems, Databases, Machine Learning, Data Science, Web Development, ios/macOS Development
- Design Director at UBC UX Hub and Member of the Women in Computer Science Club

SKILLS

- **Programming Languages:** Python, Java, C/C++, JavaScript, TypeScript, Swift, R, Ruby
- **Web & App Development:** React, Node.js, Next.js, HTML5, CSS, Swift, Xcode, Objective-C, ios/macOS Development, Angularjs, REST APIs, API Design, Mysql, MongoDB, SQL, Docker, Firebase
- **Frameworks & Tools:** TensorFlow, PyTorch, Scikit-learn, Keras, Git, Jupyter Notebook, Unix, Core OS, macOS, Embedded Systems, Real-Time Operating Systems (RTOS), HDFS, Spark, Hadoop
- **Design & UX Tools:** Figma, Adobe XD, Sketch, InVision, Webflow, Wireframing, Prototyping, A/B Testing, Usability Testing, Accessibility Standards (ADA, WCAG)
- **Data Engineering:** Data Modeling, Validation, Processing, MapReduce, HDFS, Spark, MongoDB, Pig, Hive
- **Other Skills:** Debugging, Problem-Solving, Client-Server Protocols, Multi-Functional Requirements, Embedded Processors, Distributed Systems

WORK EXPERIENCE

Machine Learning Engineer (Research), UBC, Vancouver Apr 2025 – Present

- Designed and implemented deep learning models (VTNet) for adaptive educational systems, improving model accuracy by 25% using TensorFlow and eye-tracking data.
- Optimized data preprocessing pipelines and scan path extraction methods for higher model performance and reduced computation time.
- Worked with high-performance computing workflows and Slurm job templates, improving model deployment efficiency by 30%.

Design Assistant (Part-Time), UBC Extended Learning, Vancouver Sept 2024 – Present

- Enhanced LMS course pages by applying user-centred design principles to improve UX and increase user engagement by 15%.
- Conducted A/B testing and collaborated with cross-functional teams to deliver design improvements, improving learner satisfaction by 20%.

Software Developer (Internship), TechyWeb Solutions, Vancouver Jan 2024 – Mar 2024

- Developed and maintained scalable web applications using React, Node.js, and Next.js, contributing to backend infrastructure using REST APIs and improving performance by 30%.
- Collaborated on the implementation of service-oriented architecture (SOA) to improve modularity and reduce maintenance costs by 25%.
- Participated in continuous integration (CI) workflows, ensuring stable releases and rapid development cycles.

PROJECTS

Your Search Box AI Powered Widget (Personal) | Node.js, React, NLP, AI Present

- Developed an AI-powered search widget using Natural Language Processing (NLP) to personalize search results and improve user experience.
- Integrated voice search and visual search features to increase accessibility and usability.
- Built with React, Node.js, and Next.js, reducing page load times by 25% through server-side rendering.

Webability Compliance Website (Personal) | CSS, ADA, WCAG Present

- Built an accessibility widget to ensure ADA and WCAG compliance for web applications, improving accessibility scores by 30%.
- Designed adjustable font sizes, high-contrast modes, and keyboard navigation for improved usability.

Vynix Dynamic Website (Personal) | React, Python, ML, JavaScript, D3.js Present

- Built a dynamic website with ML models to track user behaviour and optimize the UI in real-time using Python and D3.js for data visualization.

Recommendation System for VR Experiences (Personal) | *Python, TensorFlow, Jupyter, Pandas* March 2025

- Developed a recommendation system using collaborative filtering and content-based filtering with TensorFlow and Pandas.
- Achieved a 20% improvement in recommendation accuracy by integrating heatmap data and cosine similarity to enhance user experience.

Autonomous Arduino Robot (Academic) | *Arduino, C++, PID, Ultrasonic & IR Sensors* April 2025

- Developed an autonomous robot using PID control loops and real-time sensor data (ultrasonic & IR) for accurate wall following and object detection.
- Achieved 98% accuracy in pathfinding and obstacle avoidance using sensor fusion techniques.

Finance Manager Desktop App (Academic) | *Java, Swing, JSON* October 2024

- Created a personal finance management app with a Swing GUI and implemented JSON for data persistence, allowing users to manage budgets and transactions.

VancouverPizzaHeaven (Client) | *HTML, CSS, Figma, SEO* January 2025

- Developed a responsive website, improving SEO performance and increasing organic traffic by 25% through optimized information architecture and UI/UX design.