Chinmay Bhansali

chinmaybhansali29@gmail.com | ChinmayBhansali.github.io | linkedin.com/in/chinmay-bhansali

Research Interests

Core Areas: Human-Computer Interaction (HCI), Social Computing, Embodied interaction, Games User Research
Focus: Inclusive competitive sports in virtual environments (Metaverse)

Education

University of British Columbia Vancouver, BC
Bachelor of Science in Integrated Sciences *Sep 2022 – May 2026*
Concentrations: **Computer Science, Psychology, Mathematics**
Awards: **Swami Vivekanand Scholarship for Academic Excellence** (full tuition coverage for 4 years)

Research Experience

UBC Sensory Perception & Interaction (SPIN), Research Group – Research Assistant *Oct 2025 – Present*
Working with Rocco Ruan (PhD student) on "Play Together, Feel Together" project investigating technology-mediated social touch in multiplayer games

- **Prototyping:** Developing Unity-based multiplayer game prototypes incorporating robot swarm technology to facilitate remote social touch interactions, implementing new game features and mechanics to explore design variations for user studies
- **User Study Support:** Will co-design and conduct user studies to evaluate how people respond to different technology-mediated touch designs, including developing study protocols, creating psychometric questionnaires, and performing thematic analysis on qualitative participant feedback
- **Data Analysis:** Will process and analyze movement trajectory and physiological data from experiments using Python, applying signal processing techniques (filtering, dynamic time warping) and cross-correlation analysis to identify behavioral patterns and meaningful interaction signatures
- Contributing to research addressing loneliness as a public health issue by exploring how robot swarms can provide embodied representations of remote social touch in naturalistic gaming contexts

Multimodal Medical AI Research Project – Research Assistant *Jul 2025 – Present*
Collaborating with Dr. Manish Bhansali and Dr. Nilkamal Joshi on a multi-modal AI model for personalized treatment prediction in acute ureteric colic

- **Study Design & Planning:** Assisted in the conceptualization and planning of a retrospective and prospective study involving 3,000+ patient records; defined data collection protocols for integrating heterogeneous data sources (X-Ray, USG, CT imaging, and tabular clinical data)
- **Computer Vision Implementation:** Tasked with developing and training 2D and 3D Convolutional Neural Networks (CNNs) to extract volumetric and spatial features from radiological imaging data
- **Model Integration:** Contributing to the design of a fusion architecture that combines imaging outputs with an XGBoost clinical data model to predict intervention success and optimize patient treatment pathways

Industry Experience

Datamatics - Pulse J2EE Application Management *Jun 2023 – Aug 2023*
Developed an enterprise-level web application for managing bulk employee data at Datamatics during a 3-month internship

- Modeled dynamic web pages using Struts and JavaScript, enabling efficient bulk data management
- Designed and optimized MySQL queries and stored procedures, ensuring robust data operations
- Deployed and configured application modules on Tomcat server, ensuring reliable web service delivery
- Implemented responsive user interfaces with HTML, enhancing user experience across devices

Selected Projects

Food Manager – HCI Research Project (CPSC 344) *Sep 2025 – Dec 2025*

Collaborated in a team of five to design and evaluate a mobile application for reducing household food waste, applying a user-centered design process to iterate from user research to a medium-fidelity prototype

- **User Research:** Conducted formative research (N = 11) using semi-structured interviews and affinity diagramming to identify user needs regarding household food waste and inventory tracking
- **Iterative Design:** Piloted low-fidelity prototypes to validate interaction flows, utilizing findings to evolve the conceptual model from a 'Conveyor' to a 'Factory' metaphor before refining the final design into a medium-fidelity Figma prototype
- **Usability Testing:** Designed and executed a mixed-methods summative evaluation (N = 11) utilizing think-aloud protocols and post-study questionnaires to assess interface efficiency, visibility, and integration
- **Data Analysis:** Performed mixed-methods analysis by triangulating quantitative metrics (click-counts, Likert scales) with qualitative insights (thematic analysis, observation notes) to diagnose interaction bottlenecks

Bnuuy's Ship – 2D Game Development (Team Project) *Jan 2025 – Apr 2025*

Collaborated in a team of five to develop a 2D action-adventure game using C++ and OpenGL, implementing a ECS (Entities, Components and Systems)-based game engine architecture, enhancing modularity and scalability

- Integrated Tileson library for efficient map parsing and dynamic entity generation
- Developed A* pathfinding algorithm to enable advanced enemy AI decision-making
- Engineered precise polygon-polygon collision detection and resolution
- Designed a dynamic health bar utilizing linear interpolation for real-time visual feedback

ASLingo – ASL Learning Platform (Hackathon Team Project) *Nov 2023*

Designed and built an accessible web platform for real-time American Sign Language translation and learning, addressing communication accessibility

- Integrated TensorFlow and Mediapipe frameworks to implement accurate real-time gesture recognition
- Developed scalable Flask backend APIs with responsive frontend using Bootstrap and JavaScript for seamless, low-latency user interaction
- **Impact:** Enables accessible communication practice for ASL learners without requiring in-person instruction

Relevant Coursework

- **Human-Computer Interaction & Graphics:** CPSC 344: Introduction to HCI Methods, CPSC 444: Advanced Methods in HCI (in progress), CPSC 314: Computer Graphics, CPSC 424: Geometric Modelling, CPSC 425: Computer Vision, CPSC 426: Computer Animation (in progress), CPSC 427: Video Game Programming (in progress)
- **Psychology & Cognition:** PSYC 309: Cognitive Processes, PSYC 311: Psychology of Sport, PSYC 335: Gambling and Decision Making, PSYC 367: Sensory Systems, ISCI 351: Evolution of Human Cognition (in progress)
- **Math & Stats:** STAT 302: Probability, MATH 340: Linear Programming, MATH 442: Graphs and Networks (in progress)

Technical Skills

Languages: C/C++, Java, C#, Python, R, SQL, HTML, CSS, JavaScript
Tools & Environments: Git, GitHub, JetBrains IDEs, VS Code, Visual Studio, Unity, Google Colab, Jupyter Notebook
Frameworks: TensorFlow, React, Flask, Struts, Tomcat, Bootstrap, MediaPipe, Firebase, ECS