Brandon Chen

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Education

University of British Columbia — Vancouver, BC
Bachelor of Science in Computer Science, Option in Software Engineering — *Sep 2023 – May 2028*

Experience

Software Engineering Intern — Toronto, ON
Peripheral Labs — *Jun 2025 – Aug 2026*

- **Scaled volumetric video processing to over 1,000 jobs per month** by architecting an end-to-end AWS pipeline using Batch for GPU-bound stages, Fargate for pre/post-processing, and MediaConvert with ffmpeg clip extraction for video ingest, with EventBridge triggers for automatic retries and per-stage failure isolation
- **Replaced a manual process where engineers launched and tracked every job by hand** by shipping a FastAPI backend powering user-facing reconstruction requests, with Auth0 role-based access control, presigned S3 upload and download URLs, and DynamoDB-backed job metadata
- **Guaranteed reproducible deployments and consistent runtime environments across every stage** by designing a GitHub Actions CI/CD pipeline that builds, tests, and publishes per-stage Docker images to ECR
- **Kept multi-day GPU training runs alive unattended** by automating SLURM and Docker Compose GPU cluster operations with health checks and recovery tooling that detects dead workers and requeues interrupted jobs
- **Improved held-out-view quality by 8 dB PSNR** over the in-house baseline by co-designing a dynamic-scene 3D reconstruction method in PyTorch, plus a near-lossless compressed representation cutting file sizes by **60%**

Undergraduate Research Assistant — Vancouver, BC
UBC X-Lab (Prof. Robert Xiao) — *Aug 2026 – Present*

- **Holding headset framerates under stereoscopic rendering** by profiling and optimizing the render loop of a VR authoring tool for real-time editing of volumetric scenes
- **Enabling 6-DoF direct manipulation over large unstructured primitive sets** by applying per-primitive transforms propagated through the scene's temporal deformation field

Software Engineering Intern — Vancouver, BC
Pixel Light Effects — *May 2024 – Aug 2024*

- **Established the visual-quality baseline used by artists for downstream mesh correction** by architecting an end-to-end 3D reconstruction pipeline over photogrammetry capture data with COLMAP structure-from-motion initialization, producing photorealistic reconstructions
- **Reduced deployment time by 75%** and eliminated manual server setup by automating with Bash scripts, Nginx config templates, and systemd service orchestration

Projects

Club Organizational Hub | *Next.js, TypeScript, PostgreSQL, Prisma, Vercel* — *Mar 2026 – Present*

- **Scaled a full-stack internal operations platform to over 600 users across 7 university clubs**, built on PostgreSQL and Supabase with type-safe access via Prisma and continuous deployment to Vercel
- **Enforced department-scoped data isolation at the API layer** through multi-tier role-based access control (Admin, Department Head, Coordinator), and integrated NextAuth Google OAuth with delegated Calendar and Drive scopes to sync events and surface shared documents in-app

Leadership

UBC CVC | *Executive Member* — *Oct 2023 – Present*

- **Deliver 10 events per year for 500+ members on a $10k annual budget** by leading an 80-person executive team across nine departments, partnering with campus organizations, student government, and university administration to expand club visibility and promote inclusive community engagement

Technical Skills

Languages: Python, C++, TypeScript, JavaScript, SQL, HTML/CSS, Bash
Libraries/Frameworks: React, Next.js, Node.js, FastAPI, NextAuth, Prisma, PyTorch, Tailwind CSS
Tools: Git, Docker, GitHub Actions, AWS, Supabase, Vercel, SLURM, Linux, Nginx