

LANCE LI

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EDUCATION

University of Toronto — *BASc Engineering, TrackOne*

Sep 2026 – May 2030

- Top-6 Grade 12 average **97.6%**; **AP Capstone Diploma** (College Board, 2026)

EXPERIENCE

Dice — *Software Developer* | *creator-finance SaaS startup, 3 engineers*

May 2026

- Built **5 revenue-platform integrations** on Next.js 16, Fastify and PostgreSQL + Drizzle: OAuth for Patreon, Gumroad, Whop and Spotify for Podcasters; Substack via RSS-probe URL validation
- Wired the OAuth callbacks to pull live creator stats (Patreon patrons and pledges, Gumroad products and sales, Whop companies and products); sealed tokens with the codebase's AES-256-GCM helper
- Merged **9 PRs in 2 weeks**; connected the dashboard and tax views to the live analytics API, replacing demo data
- Redesigned the production landing page across **4 PRs**: scroll animations with reduced-motion support, iOS Safari and mobile layout fixes, and an indigo retheme

OPEN-SOURCE CONTRIBUTIONS

- **NVIDIA PhysicsNeMo #2156**: fixed *radius_search* (#2137) to support **1D–3D point inputs** on Warp and PyTorch backends (2D errored on Warp); added input validation, docs and tests; approved by NVIDIA maintainer
- **NVIDIA PhysicsNeMo #2165**: fixed mesh facet extraction under *torch.compile(fullgraph=True, dynamic=True)* (#2138) by specializing on cell width; added compiled-vs-eager tests; approved by NVIDIA maintainer
- **JAX MD #432**: rewrote the docs for *pair_correlation*: documented output shapes per species and averaging case, corrected the Gaussian smoothing formula, added examples; checked against **brute-force calculations** (fixes #219)
- **JAX MD #433**: added type hints to *jax.md.quantity*

PROJECTS

NSS Space Settlement Contest — *Structures Lead* | *11-student design team*

Sep 2023 – Jun 2026

- Won the National Space Society's **2026 Grand Prize: 1st of 4,920 entries** from 23,919 students in 31 countries, for a 10,000-resident rotating settlement at the Sun–Mars L2 point
- Only student credited on the Structure chapter: an **8.5 m × 100 m** CFRP / Al 7075 / Ti-6Al-4V spine carrying the rings on ~100 YBCO superconducting magnetic bearings (~5 T, below 80 K)
- Split the bearings into **12 modules** so one module failure costs **8%** of capacity; co-authored the radiation, materials and build-process chapters (stuffed Whipple shield, hull alloys by thermal zone)

Gaze Reader | *TypeScript, MediaPipe* | lance-lli.github.io/gaze-reader

Sep 2026

- Shipped a **fully on-device** pipeline (no video leaves the machine): MediaPipe face landmarks, ridge-regression gaze mapping, One Euro filtering, I-DT fixation detection and an HMM line tracker
- Verified in simulation: pages turn within **1.5 s** of the last line's end in **all 24 seeded runs**, and ~**99%** of fixations stay on the true line under 0.5–1 line-heights of gaze noise; **975 CI tests** gate deploys

Habitat Designer | *three.js, Blender* | lance-lli.github.io/habitat-designer

Sep 2026

- Specified a rotating-habitat gravity calculator: gravity gradient, Coriolis, spin-up propellant and rpm comfort bands from **5 published guidelines**; tests check it against the Stanford Torus (1.00 rpm at 895 m)
- Modeled the **1,151-part** station in Blender; an agent-written script cut **2.3 GB to a 5.4 MB** web GLB

RESEARCH

AP Research — *Independent Researcher* | github.com/lance-lli/ap-research-awe-engagement

Apr 2026

- Designed and ran a pre/post human-subjects study (**n = 11**, informed consent) of how students engage with AI writing feedback; wrote a **5,000-word** paper; recruited an Ontario Tech University advisor by cold email

HONORS & ATHLETICS

Honors: NSS Space Settlement Contest 3rd Prize (2024), Honorable Mention (2025), Grand Prize (2026)

Athletics: Badminton Canada Junior National Team (U15 2022–23; 2024–25); U17 Boys' Doubles silver for Canada at the 2024 Pan Am Junior Championships; YONEX-sponsored athlete (2024–25)

TECHNICAL SKILLS

Languages: TypeScript, JavaScript, Python, SQL (PostgreSQL)

Web: React, Next.js, Node.js, Fastify, Drizzle ORM, Tailwind CSS, OAuth 2.0

Tools: Git, GitHub, Blender, three.js, MediaPipe, JASP, Claude Code (multi-agent workflows)