

Kento Nishi

✉ kentonishi@college.harvard.edu |  GitHub |  LinkedIn |  Google Scholar |  Garmin

EDUCATION

- ⇒ **Harvard** — Bachelor’s & Master’s in Computer Science Aug. 2022 – exp. May 2026
- Concurrent four-year AB/SM Program, with Honors. GPA: 3.971.

SKILLS

Programming: Python, TypeScript/JavaScript, C++, Java, Svelte, OpenGL, Bash, Git, Docker, \LaTeX .
Research: PyTorch, CNNs, transformers, diffusion models, mechanistic interpretability, representation learning, explainability, multi-modal learning, data augmentation, LLMs, audio processing, GPU/CUDA.
Misc.: bilingual English/Japanese (professional-level), teaching. **Hobbies:** running, music composition.

AFFILIATIONS

- ⇒ **Harvard-NTT Physics of AI Group** Mar. 2023 – Present
- Advised by Dr. Hidenori Tanaka and Dr. Ekdeep Singh Lubana.
 - **ICML first author** paper (2025); also co-authored **2x ICLR** and **2x NeurIPS** papers.
- ⇒ **Harvard Visual Computing Group** Aug. 2022 – Present
- Advised by Dr. Hanspeter Pfister; mentored by Dr. Junsik Kim.
 - **CVPR first author** paper (2024), as a sophomore undergrad.
- UCSB Four Eyes Lab** Jun. 2020 – Aug. 2022
- **CVPR first author** paper (2021), as a **high school student** at **age 16**.

GRANTS

- ⇒ **Ezoe Memorial Recruit Foundation Scholarship** Apr. 2023 – Present
- Longest-running & most selective scholarship program in Japan (approx. 6 recipients/year).
 - **Full funding** of tuition and living expenses (**\$95,000/yr.**). Valid through **BA**, **MS**, and **PhD**.
- MATS** (ML Alignment & Theory Scholars Program) Jan. – Mar. 2025
- 12-week program in Berkeley, CA. Supports research on AI alignment, governance, and security.
 - Awarded \$12,000 plus \$10,000 in compute credits. Started my diffusion models project (ongoing).
- PRISE** (Harvard Program for Research in Science and Engineering) Jun. – Aug. 2024
- Highly selective 10-week fellowship by the Harvard Summer Undergraduate Research Village.
 - Awarded housing, a meal plan, and a \$3,000 stipend. Project later became my ICML 2025 paper.

ACHIEVEMENTS

- ⇒ **Harvard AI Safety Team Program Director:** Research Compute Lead for AISST. 2023 – Present
- ⇒ **John Harvard Scholar:** top 5% of the Harvard College class of 2026. 2023, 2025
- ⇒ **Advanced Half-Marathon Runner:** 1h25m10s PR (Nov. 2024). 4x race finisher. 2021 – Present
- Regeneron STS Top 300 Scholar:** the oldest, most prestigious high school STEM award. 2022

EMPLOYMENT

- Comcast** — Applied AI Labs, Speech AI Team.....
- ⇒ **Part-Time Contractor** (post-internship extension, remote) Sep. 2025 – Present
- Continuing research to mechanistically probe biases in text-to-speech diffusion models.

- Aiming for a tier-1 conference paper publication and a proprietary patent filing.

Grad-Level Summer Research Intern (Washington DC, in-person)

Jun. – Aug. 2025

- Worked on production text-to-speech models that serve over 50 million daily users.
- Uncovered and diagnosed training-inference gaps in time-domain diffusion models.

Harvard SEAS.....

⇒ **CS 79 Course TA**

Aug. 2025 – Present

- Teaching Assistant for CS 79: Design of Useful and Usable Interactive Systems by Dr. K. Gajos.
- Serving as the Studio Planning Lead; am the sole undergraduate member of course staff.

PROJECTS

⇒ **LiveTL Apps**

Nov. 2020 – Present

- Lead dev of three modular addons that improve YouTube and Twitch (LiveTL, HyperChat, YtcFilter).
- 100K+ total users; 900+ total repo stars; 20+ code contributors. Free, open-source, and cross-platform.

⇒ **holoEN Christmas Advent Calendar**

Nov./Dec. 2022, 2023, 2024, exp. 2025

- Full-stack dev of the event platform (holoen-advent.com). Officially commissioned by Cover Corp.
- 250K+ total users; a beloved yearly holiday tradition in the hololive English community.

Exio UI Elements — npm

May 2024

- A customizable, framework-agnostic web UI library. Used in my open-source websites and apps.

Torch Pitch Shift — PyPI

Jun. 2021

- The first Python library for pitch-shifting on GPU at the time. Later added to PyTorch upstream.
- 750K+ downloads/month; 135+ stars on GitHub; used by torch-audiomentations with 1.1K+ stars.

PUBLICATIONS

Representation Shattering in Transformers: A Synthetic Study with Knowledge Editing

ICML 2025, as **first author**.

Our interpretable task reveals why edits to model weights can destroy representation geometries.

In-Context Learning of Representations

ICLR 2025, as co-author.

We explain how LLMs reorganize representations in-context to align with task-specific structures.

Structured In-Context Task Representations

NeurIPS 2024 NeurReps Workshop, as co-author.

A precursor to “In-Context Learning of Representations.”

Stepwise Inference in Transformers: Exploring a Synthetic Graph Navigation Task

NeurIPS 2023 R0-FoMo Workshop, as co-author.

Our synthetic DAG navigation task clarifies when chain-of-thought might help autoregressive models.

Joint-Task Regularization for Partially Labeled Multi-Task Learning

CVPR 2024, as **first author**.

We propose a regularizer to train models using partially labeled data with linear complexity.

Augmentation Strategies for Learning with Noisy Labels

CVPR 2021, as **first author**.

Our decoupled augmentation strategy improves model robustness under noisy-label scenarios.

Improving Label Noise Robustness with Data Augmentation and Semi-Supervised Learning

AAAI 2021 Student Abstract Track, as **first author**.

A precursor to “Augmentation Strategies for Learning with Noisy Labels.”