

Zachary Lichtman

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SKILLS

Systems:	macOS, Linux (Debian), Yocto embedded Linux
Languages:	Swift, Python, C/C++, Rust, Java, TypeScript, HTML/CSS
AI / ML:	Claude & Codex SDKs, PyTorch, Hugging Face (LeRobot/ACT), MONAI, Kubeflow
AI Safety:	Alignment, Interpretability, Evals & Red-Teaming — Technical Fellow, Wisconsin AI Safety Initiative
Cybersecurity:	Kali Linux, Penetration Testing, Web Exploitation, Network Security, Auth0, Burp Suite — Northwestern CTD
Frontend & Design:	React, Next.js, PatternFly, Tailwind, Vercel, Mapbox, Figma, Adobe CC, Blender, Lucid
Backend & DevOps:	Spring Boot, Supabase, Tekton, Argo CD, GitLab, JFrog, Xcode, Git, Jira, Notion
Cloud & Infra:	AWS, Docker, OpenShift, Kubernetes, Knative, Ansible, Perses

EDUCATION

University of Wisconsin Madison · B.S. in Computer Science	2024 - 2027
Relevant Coursework: Artificial Intelligence, Data Structures & Algorithms, Discrete Mathematics, Computer Engineering	

EXPERIENCE

Member of Technical Staff Intern, Infotainment DevOps & Production Software — Hyundai America Technical Center, Inc. (HATCI)	2026
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- Architected **VERDICT**, an **evaluation harness** deciding whether a production LLM voice assistant is safe to ship to **millions of vehicles**: it holds multi-turn spoken conversations with each assistant, grading them with 28 scorers across four channels (semantic, acoustic, interactional, stability) from deterministic assertions to Prometheus-2/G-Eval/FLASK judges. **Adopted into Red Hat's Automotive Suite for use by other carmakers.**
- Building the **Red Hat OpenShift platform** that standardizes infotainment software development for **1,000+ engineers** across Hyundai, Kia, and Genesis's global R&D network. Includes distributed automated testing via hardware-in-the-loop orchestration and Cuttlefish device emulation, Tekton CI pipelines with GitOps delivery (Argo CD, Ansible), embedded Linux (Yocto) build/debug tooling, and migrating legacy in-vehicle platforms onto the cluster.
- Partnered with Amazon's voice team and Michigan State University researchers on production integration and pre-release validation of in-vehicle voice features.

AI Engineering Healthcare Consultant — Clients: Brainsprout & Raden Wellness	2025 - 2026
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- Built PyTorch/MONAI pipelines that render anatomically accurate 3D brain models, used for neurosurgical education and expert testimony at **Brainsprout** (led by Dr. Michael Walsh, Head of Neurosurgery at Northwestern Medicine).
- Guiding AI feature strategy and HIPAA-compliant data handling for Raden Wellness's health platform.

Cybersecurity Researcher — Independent Bug Bounty	2022 - 2024
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- Identified and responsibly disclosed an IDOR (insecure direct object reference) vulnerability in **OpenAI's ChatGPT**.
- Used Burp Suite and other penetration-testing tools for web exploitation and vulnerability research.

OPEN SOURCE

PowderMeet 📱 — Mapbox, Swift 6, SwiftUI, Supabase (Postgres + Realtime + Edge)	2026
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- Born from a winter-break problem no app could answer: where should two skiers separated across a mountain meet? Invented the solution: Dijkstra over the resort's trail and lift graph picks the point that minimizes the *slower skier's* arrival, weighing trail difficulty, lift queues, live closures, and each skier's own speeds learned from their imported ski-tracking history; **live across 159 Epic and Ikon resorts.**

MacSpaces 📱 — Swift, SwiftUI + AppKit, ScreenCaptureKit, CoreAudio, XcodeGen	2026
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- Native, open-source macOS menu-bar app that turns the MacBook notch into a live control surface and adds a customizable widget dock: 34 widget types, live window thumbnails with one-click exact-window focus, and a per-app audio mixer needing no virtual driver. Local-first (no account, no telemetry); ships as a signed, notarized universal DMG with a self-verifying background updater.

Heartable 📱 — Music APIs, Swift 6, SwiftUI, Supabase (Postgres + RLS + Edge)	2026
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- Built to make a Valentine's mixtape that could span **Spotify, Apple Music**, and other services: pulls them all into one master library behind a provider-adapter layer, with skip-edit versioning for mixtape-style playback and idempotent CSV snapshot/restore. Rebuilt ground-up from a React Native web app into a native SwiftUI iOS app.

CLUBS

Safety Scholar — Wisconsin AI Safety Initiative	2026
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- Conducts collaborative AI-safety research, backed by awarded model API credits and research resources (**20+ papers published org-wide**).

Member of Technical Staff — Wisconsin AI Safety Initiative	2026
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- Teach the AI-safety curriculum I came up through, at one of the nation's largest student-run AI-safety orgs (120+ members).

AI/ML Engineer, AlohaMini — WiscoHumanoids	2026
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- Teleoperation data collection and imitation-learning policy training (Hugging Face LeRobot, ACT) for the AlohaMini dexterous hand.
- Contributed stale observation detection and logging to the LeKiwi client to surface dropped frames during data collection.

Software Engineer, GNSS Navigation — Wisconsin Robotics	2024 - 2025
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- Validated GNSS navigation code for the club's autonomous rover, field-testing across varied terrain and signal conditions.

Author, Technology Committee — Wisconsin Business Review	2024 - 2025
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- Published "*Rational Machines; Irrational Standards*": AI drivers already outperform humans yet are held to irrational safety standards.

Anthropic Student Developer — Claude Builder Club	2025 - 2026
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HACKATHONS

Anthropic · ClaudeHacks'26 — WhatIsTheMove 📱 — React, TypeScript, MapLibre GL, Supabase (PostGIS + Edge + Auth), Claude API	2026
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- Built to solve campus connectivity: PostGIS clusters live pins by area, Supabase Edge Functions call **Claude** to rank mood-matched hotspots and write icebreakers, and MapLibre GL renders realtime pins on 3D building extrusions.

UW CDIS · MadHacks'24 — SmartCards 📱 — React, Java Spring Boot, H2, Auth0, OpenAI API	2024
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- AI flashcard generator that extracts key terms from user-supplied text and auto-generates study cards with LLM-written definitions; Spring Boot backend on an H2 in-memory store behind Auth0 OIDC, React frontend, full auth and CRUD online in minutes.

LIFE

U.S. Figure Skating National Silver Award (2024) · Wisconsin Hoofers Mountaineering Club · Water & Snow Skiing · Piano

Spoken: English (native), Spanish (proficient; Lacunza Academy, San Sebastián, Spain)