Oscar Lechner

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Education

- **UNIVERSITY OF COLORADO BOULDER**, *College of Engineering and Applied Science*
  - **B.S. in Creative Technology and Design**, Minor in Business
    - Focus: full-stack web development, creative programming, data visualization, computational fabrication.

Experience and Projects

- **BOULDER ALLEYCAT - Founder, Engineer, Organizer** *October 2023 - Present*
  - Founded and operated a multi-race urban cycling series spanning **10+ races and 100+ racers**, developing technical systems, operations, and media end-to-end.
  - **Engineered a real-time QR-based checkpoint timing system** capturing racer check-ins in the field and powering live leaderboards, split calculations, and post-race results verification.
  - Designed the **data architecture** for racers, checkpoints, timestamps, scoring, and race metadata to support real-time reads and long-term archival across seasons.
  - Built and maintained **two production web platforms**: a public race hub and a live timing/leaderboard tool used during events.
  - Developed a **3D race-route visualization feature** enabling racers to view winning routes as interactive models.
  - Led branding, marketing, and race-day execution, including route planning, checkpoint deployment, safety considerations, and live issue resolution.
- **DATA FOREST - Capstone Project (ATLAS Expo Installation)** *August 2025 - May 2026*
  - Designing a **real-time interactive installation** translating crowd activity into a generative forest simulation rendered in TouchDesigner.
  - Built a **distributed sensing pipeline**: multiple Wi-Fi camera modules communicating to a centralized Python/OpenCV analysis with normalized control signals for real-time visuals.
  - Implemented **computer-vision analytics** to extract crowd metrics (presence, motion intensity, density) with privacy-aware processing.
  - Engineered robustness for exhibition deployment, including signal smoothing, calibration for lighting variance, and fail-safe behavior under data loss.
- **FREELANCE WEB DESIGN - CU Club Ultimate (Men's A, Men's B, Women's A)** *December 2025*
  - Designed and developed **three team websites** supporting recruiting, rosters, schedules, donations, and historical archives.
  - Implemented **custom branding** (p5.js/WebGL) and reusable content structures for consistent styling and fast seasonal updates.
- **LEARNING ASSISTANT - DESIGN FOUNDATIONS** *January 2026 - Present*
  - Supported instruction for core CTD coursework through recitations, grading, office hours, and one-on-one technical/design mentoring.

Technical Skills

- **Programming and Web**
  - HTML, CSS, JavaScript, React
- **Creative and Visualization**
  - TouchDesigner, p5.js, OpenCV
- **Fabrication and CAD**
  - Rhino, Grasshopper, Arduino
  - Solidworks, SketchUp

- **Design**
  - Adobe Illustrator and Photoshop
- **Tools**
  - Git, Visual Studio Code, Microsoft 365, Google Workspace
- **Other**
  - Certified Scrum Product Owner