

Aryan Arya

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EDUCATION

Oregon State University

B.S. Computer Science, Intended Mathematics Minor | GPA: 3.90

Relevant Coursework: Discrete Mathematics, Vector Calculus, Statistics, Reverse Engineering, Design Engineering

Corvallis, OR

Aug 2025 - Jun 2029

EXPERIENCE

Semiconductor & Robotics Engineering Program Intern

Analog Devices / Intel

Summer 2026

Beaverton, OR

- Diagnosed particle dispersion across the top-right wafer quadrant after ion bombardment by tracing defects to a misaligned sensor port in the load-lock transfer chamber of a PVD/etch cluster tool.
- Doubled supported rover movement directions from **4 to 8** by recalibrating IR sensors and refactoring real-time C++ control logic; placed **1st in one category and 2nd overall** as the only team to achieve both results.
- Connected CAD/3D-modeled components and schematic review to C++ firmware behavior, translating mechanical constraints and sensor placement into real-time control logic.

Complex Monitor

Tualatin Hills Park & Recreation District

Sep 2023 - Present

Beaverton, OR

- Managed scheduling, vendor logistics, and facility-wide setup for **2 annual events serving approximately 4,000 attendees each**, including Eid Celebrations and the Special Olympics.

PUBLICATIONS

Cacioli, M., Arya, A., Liao, A., & Zhu, K. (2025). Do Knowledge Cutoffs Drive Clinical Accuracy? Quantifying Temporal Decay in Large Language Models. *NeurIPS 2025 Workshop: ResponsibleFM*.

DOI: 10.5281/zenodo.20754446

- Evaluated **6 GPT and LLaMA-family models** on **363 verified IDSA clinical questions**, measuring a **60-point accuracy gap** between pre- and post-cutoff results and identifying temporal decay as a safety-critical failure mode.

PROJECTS

Eve - Batch-Computing Runtime | Python, Multiprocessing, pytest, Git

Aug 2026

- Engineered a Python batch-computing runtime foundation across **10 core modules**, integrating task scheduling, process execution, state tracking, and structured result handling.
- Designed deterministic FIFO scheduling, immutable execution models, and a **7-state lifecycle**; validated behavior with **324 passing unit and integration tests**.
- Implemented spawned-process execution for **2 allowlisted workloads**, preserving identifiers across serialization and distinguishing structured workload errors from infrastructure exceptions.

GPT-Style Transformer Language Model | Python, PyTorch

Jul 2026

- Implemented and trained a **14.3M-parameter** decoder-only Transformer in PyTorch with **8 layers and 8 attention heads**, building causal self-attention, positional embeddings, residual connections, and autoregressive text generation.
- Trained for **3,000 iterations** on a character-level Wizard of Oz corpus, reducing validation cross-entropy from **4.46 to 1.63**, a **63.5% reduction**, using AdamW optimization and PyTorch CUDA acceleration.

Real-Time Pool Drowning Detection | Python, MediaPipe Pose, OpenCV, React, TypeScript,

May 2026

Node.js/Express

- Built a real-time pose-estimation pipeline that converts webcam streams into **0-100 drowning-risk scores** using landmark geometry, limb visibility, verticality, and motion stasis.
- Added **3 false-alert safeguards** - sustained-alert logic, pool-zone filtering, and multi-person tracking - and validated behavior against deck activity and out-of-zone movement.

TECHNICAL SKILLS

Languages: Python, C++ (exposure), TypeScript (exposure)

ML & Computer Vision: PyTorch, TensorFlow, scikit-learn, OpenCV, MediaPipe Pose

Software & Systems: Multiprocessing, concurrent.futures, batch processing, FIFO scheduling, React, Node.js, Express

Hardware & Design: Arduino, ESP boards, IR sensors, CAD, 3D modeling, AutoCAD

Tools: Git, GitHub, pytest, Linux