

ARJUN BASANDRAI

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EDUCATION

Cornell University, Ithaca, NY

Master of Engineering in Computer Science

Expected May 2027

Vellore Institute of Technology, Vellore, India

Bachelor of Technology in Computer Science and Engineering

May 2026

CGPA: 9.38/10

PROFESSIONAL EXPERIENCE

Micron Technology

AI Applications Engineer Intern

Feb 2026 – Jul 2026

Ahmedabad, Gujarat, India

- Owned end-to-end development of two applications for the wire-bonding team at Sanand site, from system design and implementation to testing and monitoring.
- Built a FastAPI/React defect-classification platform backed by PostgreSQL and Redis. Implemented Entra ID authentication, RBAC, rate-limiting, model versioning, and prediction logging. The system reduced defect review and reject-code assignment time from 3-5 minutes to about 30 seconds.
- Built an Airflow ETL and alerting pipeline for 400 wire bonders to flag abnormal gold-wire consumption. Across a 180-day historical evaluation, the system achieved a false-positive rate of <1% and reduced machine-level analysis time from 15 minutes to 1 minute.
- Containerized and deployed services on OpenShift/Kubernetes, added unit, integration, and end-to-end tests and Prometheus/Grafana monitoring, and wrote architecture documents, setup guides, and troubleshooting procedures to support deployment, handoff, and maintenance.

TraceLink

Software Engineer Intern

May 2025 – Oct 2025

Pune, Maharashtra, India

- Developed Solution Tester, a no-code UI regression testing framework for TraceLink's OPUS platform that allowed teams to validate configurable customer pages through reusable BDD scenarios.
- Designed the Playwright-based test engine and custom parser to convert human-readable BDD scenarios into executable browser tests. Integrated 20+ critical platform paths into the nightly regression suite.
- Built a Jira release-notes generator that used JQL to collect feature packs, epics, and stories added since prior release and compile them into structured Markdown release notes.

PROJECTS

Elixir Chess Engine

[GitHub](#) | [Lichess](#) | [CCRL 40/15](#) | [CCRL Blitz](#)

Feb 2024 – Nov 2024

- Built a UCI-compatible C++ chess engine that earned independent Elo ratings of 3573 in CCRL Blitz and 3556 in CCRL 40/15 and won the Young Talents CEDR tournament with a score of 34.5/36.
- Implemented the core engine with bitboards, legal move generation, Zobrist hashing, and transposition tables. Added iterative-deepening alpha-beta search, aspiration windows, move-ordering, and advanced pruning techniques.
- Trained and integrated a sparse 768-input NNUE model that improved playing strength by about 500 Elo. Optimized inference with AVX2/AVX-512 SIMD, added Lazy SMP multithreading, and validated engine changes through SPRT testing.

ART: Adaptive Resampling-Based Training for Difficulty-aware Classification

[DOI](#) | [arXiv](#) | [GitHub](#) | [PyPI](#)

Mar 2025 – Feb 2026

Co-first author | Machine Learning with Applications, 2026

- Proposed ART, an adaptive resampling method that updates training distribution using class-wise validation macro-F1 scores and empirical class priors. Across the tested tabular datasets, ART improved macro-F1 by 2.64 percentage points on average over training on the original imbalanced data.
- Released ART as a PyTorch package on PyPI and built a reproducible experiment pipeline that compared ART with 11 methods across five tabular, image, and text datasets, with 20 fixed-seed runs per method-dataset pair.

TECHNICAL SKILLS

- Programming Languages: Python, C++, JavaScript/TypeScript, SQL
- Backend, Frontend, and Databases: FastAPI, React, Streamlit, PostgreSQL, Redis
- Infrastructure and Testing: Docker, Kubernetes, Prometheus, Grafana, NGINX, Airflow, Playwright, pytest, Linux
- Machine Learning: PyTorch, TensorFlow, scikit-learn, OpenCV, NumPy, pandas