Chinmay Purushottam

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EDUCATION

University of Michigan — Ann Arbor, MI
B.S. in Computer Science & Cognitive Science. GPA: 3.5/4.0 — *May 2025*

<u>Relevant Coursework</u>: Machine Learning, Computer Vision, Web Systems, Database Management Systems, Computer Networks, Systems Programming, Data Structures & Algorithms, Computational Linguistics, Artificial Intelligence

EXPERIENCE

Software Engineer Intern – L2 — Santa Monica, CA
*Chaima AI (**a16z Speedrun**)* — *June 2025 – Present*
- Built website in **ReactNative/TypeScript** with **Zod** schema-validated APIs on **Node Firebase Functions**.
- Shipped real-time **AI-Agentic** booking engine (**GPT-4 & Hyperbrowser SDK**), automating reservations, payments, deliveries via Firebase, **Stripe, Tally webhooks**, & third-party **APIs** for our AI date-planner.
- Integrated **HubSpot**, **Mixpanel**, & **Sentry** for CRM sync, secure auth, analytics eventing, & error monitoring.
- Deployments/Velocity: Used env-segregated **Vercel**/Firebase configs & secrets, Vercel **preview deployments**, & **Playwright** tests on GitHub. Coordinated **multi-repository** branch development to land RN/Node changes.

Computer Vision Co-op Engineer — Boston, MA
AirWorks Solutions, Inc. — *May 2024 – Jul 2024*
- Built production-ready 2D object detection pipeline trained on **30+GB** panoramas on **Label Studio** & **Docker**.
- Developed **Python, PIL, cv2** preprocessing service scripts to extract EXIF/GPS & RGB stats, split panoramas into flattened images via inverse affine homography matrices, & grayscaling + downsampling for space efficiency.
- Merged public/private **COCO** datasets (16525 object instances) via versioned ETL. Trained **Detectron2** & **NVIDIA-ODTK** on scheduled **L4 GPUs** jobs with **GitHubActions**, achieving **92%** & **78%** accuracy.

Computer Vision Engineer Intern — Boston, MA
AirWorks Solutions, Inc. — *May 2023 – Jul 2023*
- Productionized **Python** DOTA aerial object detection model on **AWS EC2 (V100)**, achieving 84% accuracy.
- Improved **image-processing & tiling** algorithms by **4%** via hyperparameter tuning & adaptive tiling.
- Tooling & automation for **OpenCV/TorchVision/PyTorch**: CLI + scripts, CI checks, & synced environment.

LEADERSHIP

Project Lead - Reinforcement Learning Curriculum — Ann Arbor, MI
Michigan Student Artificial Intelligence Lab (MSAIL) — *Dec 2023 – Dec 2024*
- **Taught 30+** students **Python** fundamentals like numpy, pandas, matplotlib, **Gymnasium**, & **Scikit-learn**. Explored **Neural Networks, Deep-Q Learning, Hyperparameter tuning** & organized RL projects.

PERSONAL PROJECTS

Anime Recommender | *Python, scikit-learn, Postgre/SQLAlchemy, Streamlit, FastAPI*   May 2025 – Jul 2025
- Built a personalized anime recommender using **RandomForest**. Trained on genres, demographics, user history, and metadata vectorized via **MultiLabelBinarizer** from the **Jikan (MyAnimeList) API**.
- Labeled watched shows as positives & sampled unwatched as negatives to train per-user models on **2,000+ titles**.
- Developed **Streamlit** UI for login, search, & top-N recommendations, **alembic PostgreSQL** database backed.

Smart Calendar | *Python, Streamlit, Google Calendar API, Canvasapi, OAuth, CSS, HTML*   Jan 2024 – Apr 2024
- Developed a task management app for students with ADHD to streamline personal and academic scheduling.
- Implemented automatic event creation, **Google calendar** synchronization, **CanvasAPI** integration for assignments, **auto-place** event feature, and a **customizable UI** to improve user interaction and accessibility.

Search Engine | *Python, Javascript, MapReduce, RESTAPI, Git, AWS*   Sep 2023 – Dec 2023
- Built MapReduce pipeline for an **inverted index** of web pages, returning JSON search results via RestAPI.
- Developed a **GUI** & ranked results using **TF-IDF** and **PageRank** scores from the indexed server's data.

Social Media Clone | *Python, JavaScript, React, RestAPI, HTML, CSS, Jinja, Cypress*   Aug 2023 – Nov 2023
- Built Instagram clone using dynamically rendered client-side pages, achieving **95%** test coverage on Cypress.
- Implemented authentication and real-time features, supporting concurrent usage by **1000+ simulated users**.