Alex Kurkar

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Education

University of Nottingham — Nottingham, UK
BSc Computer Science — *Sept 2025 – Jun 2028*

Altrincham Grammar School for Boys — Manchester, UK
A-Levels: Mathematics A, Physics A, Further Maths A, Computer Science A* — *Sept 2023 – Jun 2025*

Experience

Code Computerlove — Manchester, UK
Product Development Intern — *Aug 2024 – Sept 2024*

- Prototyped a consumer-facing application in a cross-functional team, contributing to user-centred UI/UX in Figma and full-stack implementation.
- Worked within agile sprints (planning, standups, retrospectives), iterating on features using user feedback and product requirements.

Cheshire Datasystems Limited — Cheshire, UK
Software Engineering Intern — *Aug 2023 – Sept 2023*

- Shadowed hardware and software teams, gaining exposure to large-scale system architecture, implementation, and QA workflows.
- Observed the full software development lifecycle from requirements gathering through testing and deployment, strengthening understanding of reliable delivery practices.

Competitions & Hackathons

CHAINIQ | *Procurement agent, START Hack 2026, St Gallen, Switzerland*
Next.js, TypeScript, React, Tailwind, MySQL, Neo4j, OpenAI — Mar 2026

- Built an audit-ready procurement agent that turns messy free-text purchase requests into structured, policy-compliant supplier recommendations with transparent reasoning and escalation logic.

ENS Pay | *Crypto payments MVP, BSA Stablecoins & Payments, EPFL, Switzerland*
Python, aiogram, aiohttp, Telegram Mini App, TON Connect, HTML/JS — Mar 2026

- Built a Telegram-based crypto payments MVP resolving ENS names to wallet-ready TON payment flows, with a Python bot and Mini App handling wallet connection, links, and QR checkout.

Use-Change Hunter | *Real-estate opportunity analysis, HackLondon 2026*
Next.js, TypeScript, FastAPI, PostgreSQL/PostGIS, Redis, Docker, Leaflet — Feb 2026

- Prototyped a platform that scores development potential, risk, and confidence for properties by analysing nearby planning precedents and exporting scenario reports.

UKIEPC 2025 | *ICPC UK & Ireland Programming Contest, Team LockedIn* — Oct 2025

- Represented the University of Nottingham in the ICPC UK & Ireland Programming Contest; placed 142nd overall as part of team *LockedIn*.

Rubber Duck Agent | *AI debugging companion, DurHack X & MLH AI Roadshow*
Python, FastAPI, Local LLMs — 2025

- Built an AI "rubber duck" debugging companion where a local LLM tracks how "locked in" a developer is from git and interaction signals; demoed live at the MLH AI Roadshow.

Paladins of Pi | *Offline LLM dungeon master, HackNotts*
Python, Ollama, Raspberry Pi — 2025

- Led a team to build an offline LLM dungeon master on Raspberry Pi 5, delivering a web-based text adventure fully generated and served on-device.

Research & Publications

Analysis of Classical Gradient Boosting Models for Multivariate Time Series Forecasting | *Co-author* IEEE WCCI

- Co-authored a study benchmarking GBM, LightGBM, CatBoost, AdaBoost, and XGBoost on multivariate time series datasets (electricity, traffic, solar, exchange rates) to derive dataset-specific model selection guidelines.
- **Contribution:** Normalised the electricity dataset and implemented the prediction pipeline, including temporal feature engineering and multi-horizon forecasting evaluation using RMSE and correlation metrics.

Other Projects

Pascal Interpreter | *Python* Sept 2025 – Present

- Implemented a Pascal-like interpreter with lexer, recursive descent parser, AST evaluator, and symbol tables for variables, conditionals, and functions with structured error handling.

Neural Network from Scratch | *Python, NumPy* Sept 2023 – Dec 2024

- Built a fully-connected neural network for digit classification using matrix-based backpropagation and SGD, achieving over 95% accuracy without high-level frameworks.

Technical Skills

Languages: Python, C, C#, Java, JavaScript, HTML/CSS
Frameworks & Libraries: React, Node.js, Flask, FastAPI, Next.js, aiogram, TensorFlow, PyTorch, NumPy, pandas, scikit-learn
Tools: Git, Docker, VS Code, IntelliJ, Jupyter Notebooks
Areas: ML systems, deep learning, time series, compilers/interpreters, competitive programming, crypto payments, hackathon prototyping