JEM ANDREW

4 pondwicks close, St Albans AL1 1DG

07703445103 andrewjem8@gmail.com

**LinkedIn :** linkedin.com/in/jamesandrew‑439771333 |

**Professional summary**

MSc Computer Science graduate combining machine learning, software engineering, and data analytics to build practical solutions. Developed legal AI platform that processed through 20,000+ documents through intelligent retrieval systems and progressive education, and developed pipelines that expertly filtered and matched vital legal documents. I enjoy the full problem-solving process, from analysing data and training models to architecting backends and building user interfaces. Experience spans production ML systems, full-stack SaaS platforms, and automated data workflows.

**Skills And experience**

* ML/AI: RAG architecture, prompt engineering, vector databases (ChromaDB), LLM APIs (Anthropic Claude), Legal-BERT, BM25, PyTorch, TensorFlow
* Languages: Python, Java, JavaScript, SQL, R, HTML/CSS
* Backend: Flask, Django, Node.js, REST APIs, Flask-CORS
* Frontend: React, HTML, CSS
* Databases: PostgreSQL, MySQL, MongoDB, SQLite, Redis, Excel
* Cloud & DevOps: Google Cloud Platform, Git/GitHub/GitLab, Docker, CI/CD, Jira
* Data Science: pandas, numpy, R Studio, data visualisation, statistical analysis

**Work history**

Machine learning engineer | 09/2025 - current

**Velitor Law- London**

* Developed document matching pipeline for sophisticated civil litigation case analysing 8,000+ PDFs to detect duplicates; extracted metadata to Excel, applied fuzzy date and description matching, filtered to top 3 candidates, verified with Claude Vision API
* Designed Excel-based analytics dashboard with automated confidence scoring using nested IF/VLOOKUP formulas, conditional formatting for visual triage (green for 90%+ matches, yellow for 70-89%, red for manual review), pivot tables analysing match distribution by document type, and intelligent filtering reducing 10+ candidates per document to top 3 highest-scoring matches
* Identified 20 duplicate documents with 98%+ precision despite technical challenges where matching documents had different formats (scanned vs native), inconsistent watermarks, and varying file sizes, using Python, OCR, and multi-page sampling strategies
* Built conversational RAG system for sophisticated civil litigation allowing lawyers to query 20,000+ case documents naturally; combined ChromaDB vector database, Legal-BERT semantic embeddings, BM25 keyword search, and intelligent query routing to specialised forensic analysis prompts
* Implemented cumulative knowledge graph storing findings across sessions (smoking guns, evidence chains, contradictions, legal arguments); system learned from each query, building progressively deeper case understanding
* Enabled queries like "find smoking guns" or "build timeline of concealment"; system first established foundational case knowledge from pleadings, then answered increasingly sophisticated questions by building upon prior discoveries
* Produced tribunal-ready documentation (memoranda, skeleton arguments, cross-examination scripts) by synthesising cumulative knowledge; generated novel arguments, discovered new document connections, reduced brief preparation time by 70%

Software Engineer | 09/2025 - current

**BuildChorus - London, City of London**

* Developed full-stack features using Django backend and PostgreSQL database
* Built user configurability features for material procurement strategies
* Deployed applications using Docker containers on Google Cloud Platform
* Collaborated with the development team using GitLab and Jira workflows
* Worked with large PostgreSQL test databases to validate software functionality

**Projects**

**Django CV Portfolio**

*Django, Python, HTML*

* Built a full-stack Django application with a responsive design and modern UI/UX
* Implemented dark/light theme toggle with smooth animations using the AOS library
* Developed interactive skill charts using Chart.js and typing animations
* Created RESTful API endpoints for skills and projects data
* Integrated contact form with AJAX submission and Django admin interface
* Deployed with responsive CSS Grid/Flexbox layouts and SEO optimisation

GitHub: github.com/JemAndrew/cv-website

**Holiday Cleudo Web App**

*JavaScript, HTML5, CSS3*

* Built browser-based multiplayer game supporting 20+ concurrent users
* Implemented Fisher-Yates shuffle algorithm with collision detection
* Developed offline-first architecture using service workers and local storage
* Deployed production-ready application via GitHub Pages

GitHub: github.com/JemAndrew/holiday-cluedo

Live Demo: <https://familycluedo.netlify.app/>

**Cryptocurrency Exchange Platform** *Django, PostgreSQL, REST APIs, Order Matching*

* Built a custom order matching engine with a price-time priority algorithm
* Designed database schema with relationships between orders, trades, and wallets
* Implemented REST API endpoints for mobile integration
* Developed edge case handling for partial fills and identical price orders
* Built service-oriented architecture following Django best practices
* Currently processing test orders with stable performance

**Education**

**Newcastle University - Newcastle upon Tyne | MSc in Computer Science**

Computer Science, 09/2024 - 09/2025 - Predicted Distinction

Dissertation: "Comparison of Novel vs Standard CNN architectures for automated skin cancer detection"

* Developed an FDA-compliant evaluation framework comparing state-of-the-art deep learning architectures (ResNet, VGG, EfficientNet) for automated dermatological diagnosis. Conducted systematic performance analysis on clinical validation datasets, focusing on diagnostic accuracy and patient safety protocols.

**Newcastle University - Newcastle upon Tyne | BSc in Biology**

Biology, 09/2021 - 05/2024 - 2:1

Research Dissertation: "A Systematic Review of CRISPR Gene Editing in Enhancing Fusarium Head Blight Resistance in Wheat and Barley" (83%)

**Hobbies and interests**

I play football weekly and stay active with weight training/callisthenics and running. Intellectually, I am very enthusiastic about chess and love reading science books (recently read Einstein's theory of general relativity). I have a weird talent for geography, which is naming most countries' capital cities, flags, and locating them easily on a map, which makes me popular at pub quizzes. Socially, I am a Football season ticket holder who enjoys attending home games and gigs by my favourite rock bands.

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