

Alex Carter

Birmingham, UK | +44 7503 367393 | alex@alexcarter.uk | <https://alexcarter.uk>
LinkedIn: [linkedin.com/in/alex-carter-3401751a5](https://www.linkedin.com/in/alex-carter-3401751a5) | GitHub: github.com/alex-carter99
UK/EU dual citizen — no sponsorship required in the UK or EU | Open to relocation

Fraud, Financial Crime & Risk | Compliance Policy & Decisioning | MSc Data Science (Distinction)

PROFILE

Counter-fraud and compliance professional with five years in regulated public-sector and higher-education environments, combining frontline fraud investigation with institutional policy ownership and risk decisioning. A year as a Department for Work and Pensions Fraud Investigator across identity fraud, organised and facilitated claims, account takeover, residency fraud and document forgery, with individual recoveries exceeding £60,000. Three years at Aston University holding sign-off authority for Student visa sponsorship compliance, leading the credibility interviews that decide it and drafting the policy that governs them.

MSc Data Science awarded with Distinction, top of cohort above 90% in three modules, studied full-time in parallel with a full-time Grade 8 role. Dissertation built and validated a supervised-learning risk-screening model on 3,957 anonymised applications from the live operation.

I understand how fraud defeats a control, because I have investigated it and because I have written the control. I now want to apply machine learning to that problem inside a data-led fraud or financial crime function.

EXPERIENCE

Visa Compliance Credibility Officer (Grade 8) — Aston University, Birmingham

Jul 2023 – Present

- Own Aston's Student visa sponsorship compliance policy: draft, update and embed institutional policy as UKVI rules change, holding sign-off authority within an eight-person team as one of four officers at Grade 8.
- Lead pre-CAS credibility interviews, the university's final control before a Confirmation of Acceptance for Studies is issued, assessing applicant genuineness and making refusal decisions that carry appeal, financial and reputational consequences and are subject to formal challenge.
- Represent the university to UKVI and external audit on sponsorship compliance, in a regime where a licence breach removes the institution's ability to recruit international students.
- Advise senior executives and academic leadership on sponsorship risk, translating dense Home Office guidance into operational decisions for academic and commercial stakeholders; recommendations have changed institutional decisions.
- Screen 2,500–5,000 applications per intake cycle against a hard interview capacity of 300–600, and identified that scarce capacity was allocated by a blanket eligibility rule rather than by any measure of relative risk — the problem the dissertation model below was built to solve.
- Self-initiated employer sponsorship for a full-time MSc Data Science: built the business case, secured management and Associate Dean approval, and delivered it alongside the role.
- Lead cross-departmental workstreams across compliance, admissions and academic functions, and act as designated trainer, upskilling colleagues to cover core statutory duties during shortages.
- Contributed as part of Aston's International and Visa Compliance teams to Enrolly's national **Data Insights Innovator Award (2025)** for data-led compliance transformation: 1,000 additional CAS issued with no additional staff, 80% faster CAS processing, 62% less student–staff email.

Fraud Investigator — Department for Work and Pensions, Birmingham

Jul 2022 – Jul 2023

- Investigated a caseload of 150–300 fraud cases across a series of named national operations, covering identity fraud, organised and facilitated claims, account takeover of hijacked claims, residency and living-abroad fraud, housing and landlord fraud, and forged or altered documents and bank statements.
- Trained to conduct fraud interviews and to verify identity documents, bank statements and complete claim files to an evidential standard; proved fraud and secured repayments including individual recoveries in excess of £60,000.
- Analysed claim histories, transactional records and behavioural patterns to separate deliberate misrepresentation from genuine error and to establish the evidence needed to support recovery.

Work Coach Team Leader — Department for Work and Pensions, Solihull

Feb 2022 – Jul 2022 (*temporary promotion*)

- Led a team of 10 work coaches at a newly opened jobcentre, owning performance, leave and daily delivery within a wider office of 40+ colleagues, and implemented national policy changes on the floor.

- Established employment partnerships with Costa Coffee across Birmingham, creating a direct route into retail work for Ukrainian refugees.

Work Coach — Department for Work and Pensions, Birmingham

Sep 2021 – Feb 2022

- Managed a caseload of young people and refugees from Ukraine and Afghanistan across three jobcentres, with a strong record of moving both groups into work; built digital diary management for the wider office and tracked operational footfall data.

Dispatch Controller & Shift Supervisor (promoted from Telephonist) — AA Taxis

2016 – 2019

- Coordinated live dispatch for approximately 300 private-hire vehicles under time pressure, supervised teams of 2–8, and owned customer experience and complaints including executive accounts.

EDUCATION

MSc Data Science — Distinction | Aston University | 2026

Studied full-time in parallel with a full-time Grade 8 role. Top of cohort (above 90%) in Data Science Programming (91.1%), Statistical Machine Learning and Network Science. Also covered Artificial Neural Networks, Probabilistic Modelling, Understanding Data, and Specialist Research Skills and Techniques.

BSc (Hons) Biology / Genetics — 2:1 | Canterbury Christ Church University | 2018 – 2021

Analysed large biological datasets from industry partners; designed and produced a novel genetically modified yeast strain; presented findings to academic and industry audiences.

PROJECTS

Machine Learning for Pre-Interview Compliance Risk Screening — MSc dissertation (72%, 60 credits)

- Built an end-to-end supervised-learning pipeline on 3,957 anonymised applications spanning four intake cycles and 16 features, joining multiple operational data sources and handling the anonymisation required to work with live records.
- Compared candidate classifiers, then tuned a Random Forest in two stages (RandomizedSearchCV then GridSearchCV), testing class weighting, resampling and feature engineering against significant class imbalance.
- Test balanced accuracy 0.85 (4.7 points above baseline), ROC-AUC 0.89, 88.9% recall on the minority Failed class, five-fold CV stable at 0.86 ± 0.03 . Four features drove over 94% of importance, deliberately favouring a model a compliance officer can interrogate over a marginally sharper opaque one.
- Assessed data quality, representativeness and label bias from historical human decision-making, and set out the operational cost of each class of error. Delivered as a validated proof of concept: it was not taken into production because the executive team subsequently relaxed interview requirements, removing the business case.

Constraint Solvers and UK Election Modelling — Data Science Programming (91.1%, top of cohort). A constraint-propagation solver written from scratch, plus a full analytics pipeline on 18,000+ UK constituency results predicting 2024 outcomes with logistic regression and a neural classifier, with the cleaning stage reproduced in SQL.

Bayesian Inference and Gaussian Mixtures — Probabilistic Modelling. Conjugate Poisson–Gamma inference on 10,000 observations, a directed graphical model with posterior updating on noisy evidence, and an Expectation–Maximisation implementation for Gaussian mixtures written from scratch and validated against scikit-learn.

SKILLS

Fraud & financial crime: Fraud investigation and interviewing, identity fraud, organised and facilitated fraud, account takeover, document and bank statement verification, residency fraud, risk-based screening and triage, regulatory compliance, policy drafting and ownership, UKVI sponsorship compliance, audit and regulator liaison.

Data science & machine learning (*MSc level, evidenced in the projects above*): Python (Pandas, NumPy, scikit-learn, XGBoost, PyTorch, Matplotlib, Seaborn), SQL, R, Git. Supervised and unsupervised learning, classification, class imbalance handling, feature engineering, hyperparameter tuning, cross-validation, model evaluation (ROC-AUC, balanced accuracy, precision and recall), probabilistic modelling, network and graph analysis.

Professional tooling: Advanced Excel, Power BI, Enrolly / CAS Shield, SITS, case management systems.

Working style: Senior stakeholder communication, translating regulation into operational process, training colleagues, leading cross-functional workstreams, decision-making under regulatory scrutiny.

ADDITIONAL INFORMATION

Languages: English (native), Croatian (fluent). **Citizenship:** UK/EU dual citizen. **Location:** Birmingham, UK; open to relocation across the UK and EU, including Poland. **Vetting:** Cleared to BPSS standard through DWP service.