

Company Name:	Experian
Team / Department:	Datalabs
Address:	Kings Cross, London

Provisional title for project:

Assessing fairness/biasness in machine learning models on consumers

Short abstract of what the project would probably entail, and the data to be used:

It is not uncommon that when general features used for building machine learning models such features are indicative of more sensitive features (e.g. ethnicity/sex), unintentionally causing models to produce outcome with biasness on such features. This project will aim to explore fairness and biasness in machine learning with the following proposal:

- Identify and assess degree of issue on suitable datasets (e.g. geographical data + financial status + ethnicity)
 - o Datasets to assess: British Population survey, CAMEO Analysis Postcode Directory
- Research (+ literature review) on how to quantify fairness
- Build prototype (e.g. using python) that automates fairness assessment (make open source/publication)
 - o Supervised learning techniques (random forest, etc.) to predict income/wealth using features including ethnicity, geographical data
- Stretch goal: Investigate on ways to resolve datasets/models that have concerns in fairness (e.g. anonymization)
 - o Assess how to incorporate differential privacy/k-anonymity clustering into modelling/feature generation

Data to be used: Census (British Population Survey), CAMEO data (Analysis Postcode Directory, Unemployment Analysis).

Essential and desirable skills that the student would need to have:

Essential skills (NB): Basic python (or similar) programming language

Desirable: Familiarity with basic machine learning concepts (e.g., overfitting, crossvalidation, regularization, linear regression)

Preferred degree programmes (if any):

Would any work by the student need to be carried out on site at the Company with the exception of supervisory meetings?

No

Any issues of data confidentiality and IPR that would need to be resolved?

No

Preferred selection method

Face to face

Support and training offered by the company

1 hr per week or two weeks, as needed & ad hoc via email

Financial assistance offered by the company

I agree to pay the student £500 (plus travel expenses) ...

For details on how to apply, please visit:

<https://www.cdrc.ac.uk/retail-masters/details-for-students/>