Project title: AI-Driven Label Recognition in Real-World Settings

Supervisor: Dr. Shuo Wang, School of Computer Science

Theme: machine learning, image processing, AI

Project description:

The primary goal of this project is to develop a high-performing and lightweight machine learning model, capable of recognizing letters and numbers, whether printed or handwritten, on small labels. The final model will be deployed in a real-world system. To achieve this, this project involves three specific tasks:
1) Explore and implement image processing techniques and machine learning algorithms to train AI models that can recognize texts effectively. A privacy-preserving feature will be considered.
2) Evaluate and compare different approaches to identify the best-performing model, considering the real-world settings such as: small label sizes, various label materials (e.g. cloth, paper), faded letters after washing, different handwriting styles, smudged or distorted text, various lighting and weather conditions.
3) Deploy the final model to the cloud and integrate it into the existing system for real-world testing.

Other information:

The successful applicant will closely work with me and my research team on the above tasks based at the School of Computer Science. This project offers a valuable opportunity to develop the technical skills in applying AI to real-world challenges, along with hands-on experience that can enhance the CV and contribute to a future career in AI with impactful outcomes.

Applicants should ideally have achieved at least 70% in their past AI-related modules and demonstrate a strong interest in image processing and machine learning. If the applicant is not studying towards a Computer Science degree, he/she must provide evidence of relevant experience for this project.

For any questions about this project and application, please contact me via email (s.wang.2@bham.ac.uk).

Award duration and value:

2 months to take place during the summer vacation 2025. The successful applicant will be employed by the University of Birmingham for a maximum of 36 hours per week, at the rate of £14.51 per hour.

Eligibility criteria:

- Students must be in the middle years of their undergraduate degree programme (i.e. have completed their 2nd year of study on a 3 year degree course, or have completed their 2nd or 3rd year of study on a 4 year degree course)
- The internship is open to those paying Home fees on their undergraduate degree programme.
- Students should be performing at 2:1 level in their undergraduate programme (as evidenced by degree transcripts).

How to apply:

Please complete the University of Birmingham EPSRC Vacation Internship application form to tell us about yourself and the proposed project, and return this to epsgraduateschool@contacts.bham.ac.uk.

Please include with your application:

- A copy of your CV
- A copy of your undergraduate degree transcript showing all marks to date

The closing date for applications is: **Monday 26 May 2025**