



Wednesday 21 Feb 2024
West Derby

Programme of Activities

10.00 – 10.15	Arrival in our Lab & Welcome (including security induction & account registration)
10.15 – 11.00	Workshop 1: Introduction to AI (Jade)
11.00 – 11.30	Giant Sorting Network (outdoor activity)
11.30 – 12.00	Lunch Break
12.00 – 12.45	Workshop 2: Encryption 101 (Zack)
12.45 – 13.45	Hands-on Workshop: Lego EV3 drives the warehouse
13.45 – 14.00	Closing Talk

All workshops take place in Lab 3 of the George Holt building.

Information about the Activities

Introduction to AI

My lesson will be to give students a brief introduction to artificial intelligence. To give a good overview of artificial intelligence, I will be discussing 3 main topics:

- What data is used to train AI models, and what characteristics it should have.
- In what way is the data used to train AI models (discussing finding patterns, similarities and trends) - a very basic overview.
- What safety and ethical considerations should there be when we are developing and using AI tools: Bias, Reliability, Transparency and Privacy

Classified mission: Encryption 101

Encryption has been used throughout history to ensure privacy of sensitive information, all the way from ancient Egypt to our text messages every day. In this introductory lesson, students will learn what encryption is, how it works, its applications, and why it's important. Following a spy theme, students will get the chance to encrypt and decrypt text using Caesar and Vigenère cipher in a competitive group activity.

Giant Sorting Network

In this outdoor lesson, pupils will play the role of the "compute nodes" in a parallel sorting algorithm. They will experience first-hand how parallelism speeds up computation, but also makes it more challenging to reason about programs.

Lego EV3 Drives the Warehouse

Robots managing large warehouses are one of the many examples where automation helps humans to solve a task faster and cheaper. For this to be effective, robots need to be at least partially autonomous, i.e., able to sense and react to the physical world without (constant) human intervention. In this hands-on lesson, pupils program Lego EV3 robots to follow a line, avoid obstacles, and ultimately navigate a warehouse safely and autonomously.