



Wednesday 20 March 2024
Calderstones

Programme of Activities

10.00 – 10.15	Arrival in our Lab & Welcome (including security induction & account registration)
10.15 – 11.00	Workshop 1: Logic circuits (Nikita)
11.00 – 11.30	Giant Sorting Network (outdoor activity)
11.30 – 12.00	Lunch Break
12.00 – 12.45	Workshop 2: Introduction to AI (Tommy)
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

Artificial Intelligence is a field of computer science that reshapes how we think about computers. Understanding AI is paramount in today's rapidly evolving society. Starting with Alan Turing creating the 'Imitation Game' in 1950, the field of AI has mostly grown exponentially, evolving how we think of computers from a tool to a machine that can think, make its own decisions and, much like Turing envisioned, imitate a human. This lesson aims to provide a foundational knowledge of how AI has developed since Turing's vision of a future in 1950.

Logic circuits

Logic underpins the entirety of computer science, from writing large pieces of code to the very bits that make up a computer. To be able to study and work in computer science you need to have a good understanding of basic logic such as AND, OR and NOT. People also need to be able to use the 3 (and others) in conjunction with each other to on programs for example. This lesson will help students understand how useful logic gates are and become more comfortable with complex knowledge of gates and circuits as well as their real-life applications in computer science.

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.