Wednesday 29 Jan 2025
Notre Dame

Programme of Activities

10.00 – 10.15   Arrival in our Lab & Welcome
(including security induction & account registration)

10.15 – 11.00   **Workshop 1: Decomposition and Flowcharts (Stefan)**

11.00 – 11.30   **Giant Sorting Network** (outdoor activity)

11.30 – 12.00   Lunch Break

12.00 – 12.45   **Workshop 2: Binary system and radix sorting (Jenny)**

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

Decomposition and Flowcharts

Discover the power of thinking like a computer scientist and learn effective life skills by breaking big problems into small, manageable steps through decomposition. This hands-on lesson uses real-life examples, like planning your day or making tea, to teach the correct way to approach and understand a problem to create efficient algorithms to solve it – no coding experience needed! You will understand the importance of computer scientists and engage in interactive activities that will highlight how these foundational skills can lead to exciting careers in tech. By the end, you'll feel inspired and ready to explore the endless creative possibilities 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.

Binary system and radix sorting algorithm

Discover the magic behind how computers think and organize data! This interactive lesson dives into the world of binary numbers, the building blocks of all computing. You'll learn how to count in binary, perform binary arithmetic, and explore the clever Radix Sort algorithm. Hands-on activities make it fun and engaging, as you build your own sorting model to see an advanced computer science concept in action!

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.