UNIVERSITY OF LIVERPOOL

Department of Computer Science
Computer Science Taster Days

Wednesday 5 Feb 2025
St Nicholas

Programme of Activities

10.00 – 10.15	Arrival in our Lab & Welcome (including security induction & account registration)
10.15 – 11.00	**Workshop 1: Search like a superhero, Master the art of algorithms (Samya)**
11.00 – 11.30	**Giant Sorting Network** (outdoor activity)
11.30 – 12.00	Lunch Break
12.00 – 12.45	**Workshop 2: Introduction to Machine Learning (Matt)**
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

Search like a superhero, Master the art of algorithms

Have you ever wondered how computers search through massive amounts of information so quickly? This lesson introduces students to the fascinating world of logical thinking, fundamental to all of computer science, through a hands-on and relatable experience. Students will learn to code using python to solve logical puzzles and understand how algorithms like linear search and binary search help computers find information efficiently. This lesson is fun, challenging and leaves students with that ‘eureka’ moment about how algorithms and logic shape the technology they use.

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.

Introduction to Machine Learning

Introduction to Machine Learning (ML) is a hands-on and engaging session introducing Year 9 students to the exciting world of Artificial Intelligence (AI). The lesson includes real-life examples, a case study in the construction industry, and a practical exercise in image recognition. Students will explore how Machine Learning works, its applications, and its challenges. This lesson will delve into AI’s potential and pitfalls, and students will learn how this technology can be applied in their lives.

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.