



Malvern Panalytical – Application Scientist Placement

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Archimedes

The first few months of my placement were spent working in applications for the Archimedes system, which measures particle size using resonant mass measurement. Particles are sent through a microfluidic channel along a resonating cantilever, inducing a frequency shift which can be used to calculate the buoyant mass of the particle. If the particle density is known, buoyant mass can be used to calculate dry mass and size.

During my time in the RMM team, I took part in some notable projects. I spent some time researching and measuring microbubbles, which are a growing interest in the medical industry. I also had the opportunity to analyse some samples sent to us by customers, which I then presented in a later meeting. A lot of my time went towards refining a method for measuring particle density using the Archimedes system.



Nanosight

Following Christmas, much of my work was moved to applications for the Nanosight NS300 system. This system uses nanoparticle tracking analysis, NTA, to measure particle size. This is done by tracking the movement of particles under Brownian motion to calculate a diffusion coefficient, from which hydrodynamic radius can be calculated.

My main project within the NTA team was to develop a reference material for particles at the lower limit of detection for the NS300 system. I was, in effect, pushing the absolute bounds of the instrument. In the end, I used my findings to produce a written standard operating procedure for consistent measurements of particles within this size range.

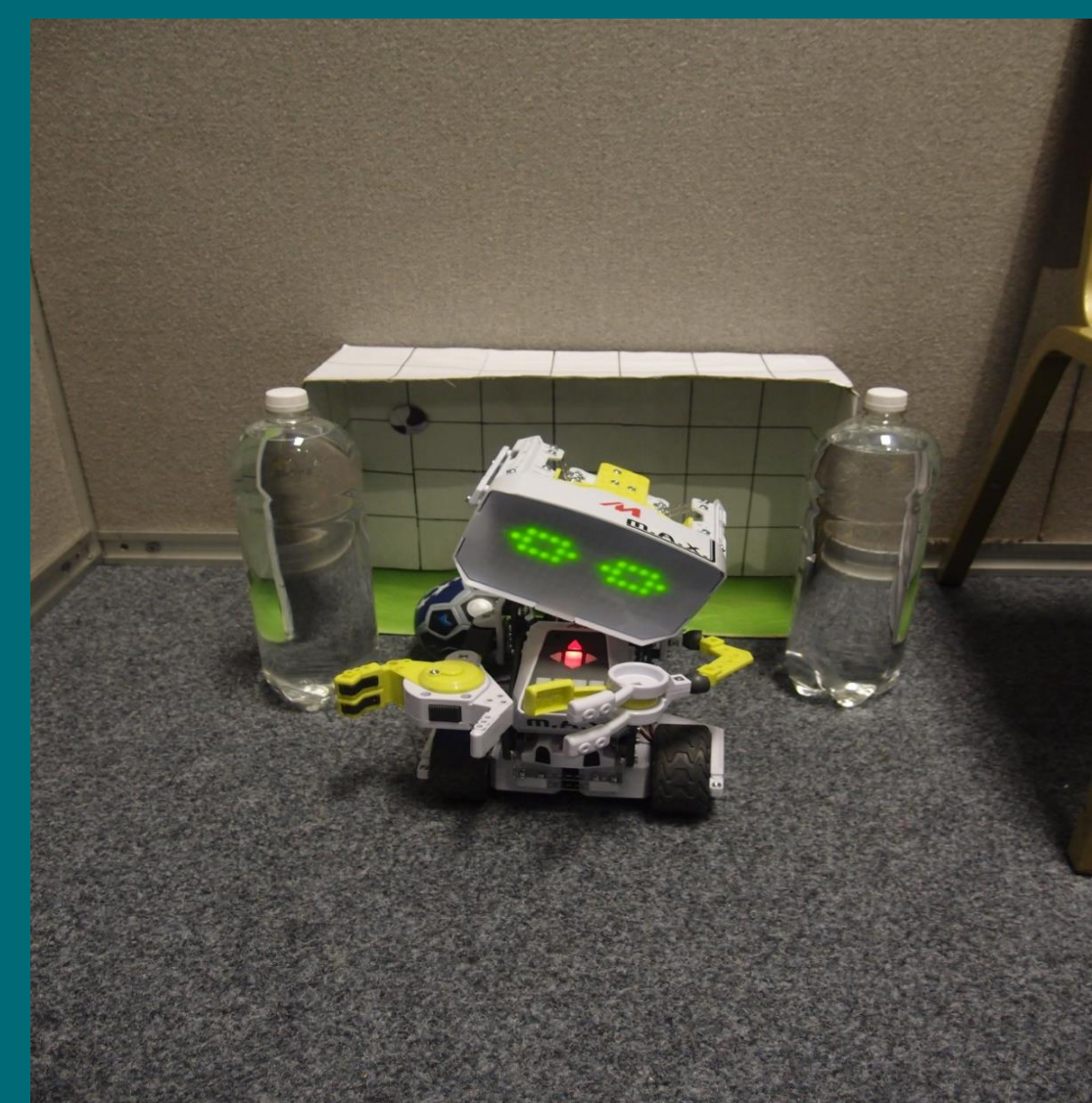
Other work I took part in under the Nanosight team includes more customer interactions and general research and support for the NS300.



STEM Ambassadors

During our time at Malvern, myself and the other year in industry students signed up as STEM ambassadors, with the aim of encouraging younger people to be more involved in STEM subjects and careers.

We attended several events throughout the year, for which we had to make up some fun and engaging activities that would be interesting for the students. We also spoke with them about potential STEM careers and talked about our own experiences in the industry.



What I've Taken Away

- Much more confidence in presenting my work, whether it be to my peers, customers or management.
- Leaned new ways of compiling and sharing data, statistical analysis and report writing.
- A new interest in a different industry.