Thomas Northall-Little

Computer Science UNSW

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By-Line:

I have been thoroughly interested in computers and engineering from a young age, and have competed in several computer science and engineering competitions throughout my life.

I first began to experiment with basic programming or scripting around the ages of 11 and 12, where I started to write mini programs in bash. By age 12 I had started to learn Ruby and continued to work with it throughout high school.

At the age of 15 I began to experiment with JAVA, and the realm of object oriented programming. With the aid of Minecraft, I furthered my abilities by creating a considerable modification to the game, adding in my own characters, AI, environments and weapons.

In High School, as part of the curriculum I studied python and HTML/CSS. I competed in a few Computing Competitions and scored highly in the NCSS challenge.

I am currently working on a couple of projects, such as a drone controlled from Raspberry Pi. I found during my first year of University that COMP2121 greatly interested me, it was a course which mainly focused on microcontrollers and how they are used; it covered in depth assembly programming, interrupts and control systems.

Projects

- Pi Drone – Currently finishing a drone controlled exclusively from a Raspberry Pi. The Pi's job is to stabilise the drone, avoid walls and auto-land. This has been achieved with C++ programming on a Windows IOT device.
- RC Car Project - Automated Car as part of UNSW's Create Society's competition to race automated cars against each other. Each car is only allowed a webcam to traverse the course while racing against other RC cars. The cars have to manage their speeds and stay on the course.
- Computer Vision – I am deeply interested in AI systems, computer vision is particular interest to me and is very applicable to my Pi Drone.

Education

- UNSW – Computer Science – 2016->2019
- Central Coast Grammar School – Completed HSC – 2006->2015

Volunteering

- 2014 – Raised money and constructed Houses in Cambodia for local villages as part of the Tabitha Foundation. Spent time with the children of the Sunrise Villages of Cambodia.
- 2013 - Completed Silver Duke of Edinburgh
- 2012 - Completed Bronze Duke of Edinburgh

Achievements

- 2015 - Academic Excellence award for Software Design and Development
- 2014 - Captain of House
- 2014 - Academic Excellence Award for Software Design and Development
- 2014 - Participated in the NCSS - High Distinction at the Intermediate level
- 2013 - Certificate of Excellence for Information and Software Technology
- 2013 - The Duke of Edinburgh's award Silver level
- 2013 - Credit for Science Skills Competition UNSW
- 2012 - The Duke of Edinburgh's award Bronze level
- 2012 - Distinction in the National Geographic Australian Geography competition
- 2009 - Distinction in Mathematics Challenge for Young Australians
- 2009 - Distinction in Computer Science Skills UNSW
- 2008 - Distinction in Computer Science Skills UNSW
- 2007 - EngQuest State Winner

Relevant University Courses:

Course	Description
COMP2121	Microprocessors and Interfacing – Learnt how to program an Atmel2560 processor in Assembly – a common processor among Arduino's. Final Assessment was to emulate a microwave by handling interrupts from buttons, keypads, writing to displays, controlling a motor using the Arduino.
COMP1927	Introduction to Sets, Graph Theory/Traversal/Paths, Trees and tree balancing/sorting, and more advanced knowledge of pointers in C
COMP1917	Introduction to C programming. Including good programming structure and linked lists.
MATH1231	Expansion on the knowledge developed in 1131, including eigenvectors, linear vector spaces and non-linear mathematics. Calculus studied differential series and equations.
MATH1131	Introduction to systems of linear equations, matrices, determinants as well as continuous and differential functions.
ENGG1000	Introduction to engineering – A project based course. My Groups project was to build a bionic hand for less than is commercially available. My group won the end of semester competition against over designs on testing day.

Technical Skills

Bash	C	JAVA
Ruby	HTML/CSS	Git
C++	Assembly	Control and PID Systems

References

Please email me for referees, as I cannot post contact details on the internet.