

Through the TechLauncher program, the ANU is supporting the participation of a student team in the SC25 SCC. We are connected directly to the ANU through our advisor: Dr John Taylor (Professor in the School of Computing, College of Engineering, Computing and Cybernetics at the ANU. Visiting Scientist at CSIRO). While working for the CSIRO in 2008, in partnership with XENON, Dr Taylor developed one of the first ever NVIDIA GPU supercomputer clusters. As well as this, he is a recent member of both the Gordon Bell prize committee and Chair of the Gordon Bell Climate prize committee.



**Australian
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University**

Our team is built on a foundation of complementary skills and experience, ready to tackle the Indy Student Cluster Competition at SC25. Our diverse backgrounds, which span Advanced Computing, Software Engineering, and Cybersecurity, give us a unique edge as a team, preparing us to overcome the challenges presented throughout the SCC. Through collaboration with National Computational Infrastructure (NCI), Defence Science and Technology Group (DSTG) and Commonwealth Scientific and Industrial Research Organisation (CSIRO), and our hardware vendor XENON Systems, we have advanced our knowledge of High Performance Computing and increased the Australian National University's presence in the international High Performance Computing community.



The Team



Will

I am currently studying a Bachelor of Advanced Computing whilst also employed at a school teaching programming to years 7 through to 12. Alongside my studies and teaching, I'm deeply invested in music. I play French horn in an orchestra and dabble in composition when I find the time. Music offers me both a creative outlet and a chance to unwind from my busy schedule. Outside of academics and music, my love for photography around Canberra's bushland with friends continues to be a source of inspiration, offering moments of tranquility amidst life's hustle and bustle.



Sithun

Hi everyone! I am currently exploring a Software Engineering degree along with dedicating time to business management while also being a part time Technical Consultant. This blend of real world experience with infrastructure along with the experience I have gained developing programs has resulted in me slotting nicely into being a passionate and dedicated backend developer. My future vision involves making technology more accessible, particularly focusing on Augmented Reality and Virtual Reality. I always put myself out there, never staying comfortable and always eager to learn as well as helping others do their best.



Daniel

I am in my third year of a Software Engineering degree at the ANU, which is where I spend most of my week. I was drawn to computing as I've always really enjoyed technical problem solving. Outside of study I enjoy speedcubing, where I've competed in the world championships in 2019, and Oceanic championships in 2022. Music is also a big passion of mine. I'm a self-taught pianist, which has helped with my ventures in producing and publishing my own songs. Leading a sound team at my church has allowed me to use these skills to serve others. I always make the most of the quiet parts of the semester to work on new music (the backlog of unfinished ideas is very long).



Tai

I am a final-year Advanced Computing student at the Australian National University, specialising in Systems and Architecture. Alongside my studies, I have been interning as a data engineer and actively contributing to various open-source projects. I'm passionate about making software more advanced and performant for everyone. Outside of academics, I enjoy playing soccer and video games.



Nicholas

I am a 3rd year studying Software Engineering at the Australian National University as I love using programming to solve problems. I specialise in mechatronics, focusing on the integration of hardware and software systems. I have 2 years of experience working as a software developer in Canberra. I have been successful at multiple team engineering competitions such as ACT Robocup and ANU gameJam. I enjoy sports participating weekly in a social baseball team and having won several Orienteering and Rogaining competitions. In my spare time I go for training runs and play trading card games.



Beno

I am currently studying a Bachelor of Advanced Computing, majoring in Cyber Security, and specialising in Human Computer Interaction. With this, I am currently interning as a Data Engineer and working as a Live Events Technician so it's safe to say that I have a few different interests. In my spare time, I enjoy playing the guitar, playing Field Hockey for the ANU, Photography, and Skiing. As a bit of a "jack of all trades, master of none" person, I am not specifically sure what I intend to do for my future career, but as long as I have a computer in front of me, good people around me, and a clear goal to work towards, I will give my all and achieve at the highest level.



We have spent a year optimising our software stack. We researched, implemented and tested resource managers, compilers, and job schedulers. We utilised optimised an Ubuntu images, utilising GitHub actions to automatically schedule and run applications on the clusters. Upon completion, the results are automatically saved to GitHub and published on our team's website so the team, advisors, and sponsors can monitor progress. The website's analysis tools streamline debugging and performance tuning. Jetstream2 compute usage is continuously tracked to maintain efficient resource allocation.



Leaderboard



Website

Clusters



Over the past year we have been extremely fortunate to have access to two clusters to experiment with and develop our skills. The first, on the left, being a decommissioned portion of the NCI Rajin cluster. The second, on the right, being four **XENON NITRO CN25A Duo 2124CQ-NART+** nodes boasting four **40GB A100 GPUs, 512GB DDR4, and two AMD EPYC 7002/7003 CPUs** per node. Generously provided by XENON Systems. With this cluster, we hit a peak of **190 Teraflops** in NVIDIA HPL.



John

Prof. John Taylor is a Professor in the School of Computing at the ANU's College of Engineering, Computing and Cybernetics, and also serves as a Visiting Scientist at CSIRO. With extensive experience in high-performance computing, Dr Taylor collaborated with XENON in 2008 to develop one of the earliest NVIDIA GPU-based supercomputer clusters. Additionally, he has contributed to the global HPC community through his roles as a member of the Gordon Bell prize committee and as Chair of the Gordon Bell Climate prize committee.



Ayush

Ayush Samuel is a skilled Software Developer with a strong background in web development and blockchain technologies. As an advisor, he offers practical, experience-based guidance rooted in a solid understanding of software architecture, problem-solving, and modern development practices. Known for his commitment to continuous learning and a hands-on approach to tackling technical challenges, Ayush supports the project with thoughtful input that helps the team build reliable, effective solutions.