David Ferris

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Employment History and Professional Experience

ARC Centre of Excellence for Complex Dynamic Systems and Control (CDSC)
Researcher   *November 2009 – February 2012 (2 years 4 months)*

As part of the University of Newcastle Industry Scholarship Scheme (UNISS), I completed three 10 week work placements at CDSC. I worked under direct supervision of Professor Graham C. Goodwin, one of the top 100 most cited Engineers worldwide.

During my first two placements, I was the main programmer for two modules of CDSC's "Virtual Laboratories for Control System Design" program: one simulating Wind Turbines and the control systems involved in their operation, the other simulating a Bioreactor control system model. These required knowledge of the Java programming language and comprehension of advanced Electrical, Chemical and Control Engineering concepts.

In my third and final year at CDSC, I completed an industrial simulation of an induction heating furnace for use in Control System design, and co-authored and published an academic paper on the subject at the IFAC Conference on Nonlinear Model Predictive Control in 2012.

University of Newcastle
PASS Leader   *January 2011 – October 2011 (10 months)*

The Peer Assisted Study Session (PASS) program is an initiative by the University of Newcastle which allows students to attend weekly review sessions for their course, led by a past student who attained high marks. These sessions are informal and involve discussion among the students to solve typical problems.

As a PASS leader, I directed and oversaw sessions for the Mathematics 1 and Mathematics 2 programs at the University of Newcastle, courses common to the first year of most Engineering and Mathematics degrees.

Education, Academics, and Awards

University of Newcastle (2009-Current)
Bachelor of Engineering (Electrical)/Bachelor of Mathematics
The Engineering section of my degree has focused on Computer Engineering, Embedded Systems design, and Programming. The Mathematics section focused on topics such as Algebra, Set Theory, and Complex Analysis. I have maintained a minimum Distinction average over the course of my degree.

St Philip's Christian College (1999-2008)
UAI: 95.6
Through an accelerated learning program, I completed my secondary studies at the age of 14. I was the first student attending my school to ever complete Extension 2 of both Mathematics and English.

Achievements and Awards
- 2009: Awarded UNISS (University of Newcastle Industry Scholarship Scheme) Scholarship
- 2009: Awarded University of Newcastle Gifted and Talented Scholarship
- 2009 and 2010: Placed on Faculty of Science and Information Technology Commendation List
- 2009 to 2012: Placed on the Dean's Merit List - Engineering and Built Environment
- 2010: UNISS Foundation Award: Excellence (Excellence in First Industry Placement)
- 2012: UNISS Insignis Award Finalist (Excellence in Final Industry Placement)
- 2012: Sony/Shohoku College Exchange Scholarship (2 Week Student Exchange to Japan)
- 2013: Alumni Award for Innovation - Festival of Crazy Ideas, St Philips Christian College

Technical and Personal Skills

- Proficiency with Microsoft Office and Adobe Creative Suite
- Typing speed an average of 80 words per minute
- Programming experience in Java, C, C++, C#, Assembly Languages, MATLAB and Maple
- Experience with HTML, CSS, Javascript, and Content Management Systems such as cPanel, MediaWiki, and Wordpress
- Familiarity with the Windows, Mac OS, and Linux operating systems
- Strong grounding and broad knowledge in Mathematics and Statistics
- Experience in Engineering Research in a Team Environment
- Effective Communicator with history of Public Speaking and Debate
- Creative and Analytic Problem Solver
- Friendly, Outgoing and Sociable

Hobbies and Interests

- I have extensive experience in writing and have published paid and volunteer work online, including short fiction for The Mad Scientist's Journal, contributions to the SCP Foundation writing project, and articles for Kotaku Australia, a video game journalism website.
- I have made multiple contributions to the Online Encyclopedia of Integer Sequences; namely, sequences A261656, A261657, and A261658.
- I am a member of the Every Gamers Guild, a general gaming club which meets monthly to play Board games and Tabletop Roleplaying games; I also participate in a separate weekly gaming group.
- I have an interest in Japanese culture and society, and have learned how to speak the language at a basic level.
- I enjoy playing and programming video games, having participated in "game jams" such as the 7 Day First Person Shooter challenge.

Publications

Opportunities and Challenges in the Application of Nonlinear MPC to Industrial Problems
Nonlinear Model Predictive Control, Volume #4 | Part #1
Goodwin, Graham C.; Cea Garrido, Mauricio Esteban; Seron, Maria; Ferris, David; Middleton, Richard; Campos, Bernardo