Anthony Arnold

Education

2016- · · · **Ph.D., University of Queensland** School of Maths and Physics.
Thesis title: *The Dynamics of Black Holes in Star Clusters.*

2007 – 2015 **B. Inf. Tech., University of Queensland** in Computer Systems and Networks.
Honours Class I.
Prentice Scholar.
Dean's Commendation for Academic Excellence.

Skills

Coding	Ada, C, C++, CUDA, Fortran, Java, Javascript, LaTeX, Lua, Python, SQL, etc.
Databases	MongoDB, Oracle, PostgreSQL, SQLite.
Platforms	Kubernetes, Redhat Openshift, Windows, Linux.
Misc.	Academic research, coaching & mentoring, mathematics, physics, data science.

Employment History

2022 - · · · **Principal Software Engineer,** Boeing Research & Technology - Australia.
High-fidelity physics models.
Sensor simulations.
Unreal engine.
Space platforms.

2021 - 2022 **Principal Software Engineer,** MSGS, Boeing Defence Australia.
Software architecture, engineering and security.
Scrum methodology.
Mentoring and coaching.
Devops.
Secure software practices.
Customer engagement.
Data streaming.
Kubernetes.

2018 - 2021 **Senior Software Engineer,** Execution Lead, MSGS, Boeing Defence Australia.
Highly-available, scalable systems.
Continuous integration and delivery pipelines.
Secure software practices.
Full stack architecture.
Scrum methodology.
Geographically dispersed team.

Employment History (continued)

2015 - 2018 **Software Engineer,** Phantom Works International, Boeing Defence Australia.
Distributed simulations (DIS IEEE Std. 1278).
Electronically scanned arrays.
Electronic warfare.
Fast jet cockpit simulation.
Fixed-wing flight dynamics.
Interactive Friend or Foe (IFF).
Laser designators and trackers.
Radar, infrared and optical sensors.
Rocket dynamics.
Submarine warfare.
Weapons systems and lethality.

2012-2015 **Senior Analyst Programmer,** The Tatts Group.
Devops engineering.
Efficient software algorithms and data structures.
Environment-seeded random number generation.
High-frequency transaction processing systems.
High-availability.
Multi-cast networks.
Shared memory.

2011-2012 **Software Developer,** EMerchants Pty. Ltd.
Financial systems development.
PCI-compliant software development.
Database administration.
Modern web architecture and design.

2009-2011 **Software Developer,** EHealth Networks Pty. Ltd.
Health services systems development.
Web design and database administration.
Service brokers and cross-network messaging.

2008-2009 **Juniour Software Developer,** Elynx Pty. Ltd.
Agricultural software development.
Software design methodology.
Geographic databases.
Graphical algorithms.

Training

2020 - 2021 **Leadership Next,** The Boeing Company.
Communications Team - Enterprise Awareness and Sustaining.

2020 **The Seven Habits of Highly Effective People,** Franklin Covey.

Inside Out Coaching, The Boeing Company.

Dare to Lead, Justine Froelker.

2019 **Team Leader Training,** The Boeing Company.

2018 **Fundamentals of Systems Engineering,** The Boeing Company.

2017 **Certified Scrum Master,** Scrumology.

Training (continued)

- **Introduction to Tactical Data Link,** Boeing Defence Australia.

2016
- **Electronic Warfare Foundations,** Babcock Training.
- **Conversational Capacity,** Craig Weber.

2015
- **SAFEMinds** workshop.

Coaching & Mentoring

2017
- **Young Science Ambassador,** Wonder of Science.

2015- · · ·
- **STEM Ambassador,** Boeing.

Research Publications

1. Arnold, A. D., Baumgardt, H., & Wang, L. (2021). Accelerating nbody6 with a graphics processing unit-enabled particle-particle particle-tree scheme. *Monthly Notices of the Royal Astronomical Society*, *509*(2), 2075–2083. https://doi.org/10.1093/mnras/stab3090

2. Arnold, A. D., & Bialkowski, K. (2015). Distributed open source software-defined GPS, In *Proceedings of the ASWEC 2015 24th australasian software engineering conference on - ASWEC ' 15 vol. II*, ACM Press. https://doi.org/10.1145/2811681.2811690