

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  **Junior 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)

- 2016  **Introduction to Tactical Data Link**, Boeing Defence Australia.
- 2016  **Electronic Warfare Foundations**, Babcock Training.
-  **Conversational Capacity**, Craig Weber.
- 2015  **SAFEMinds** workshop.

Coaching & Mentoring

- 2017, 2023  **Young Science Ambassador**, Wonder of Science.
- 2015-...  **STEM Ambassador**, Boeing.

Research Publications

- 1 Wan, Z., Arnold, A. D., Oliver, W. H., Lewis, G. F., Baumgardt, H., Gieles, M., Hénault-Brunet, V., de Boer, T., Balbinot, E., Da Costa, G., Mackey, D., Erkal, D., Ferguson, A., Kuzma, P., Pancino, E., Peñarrubia, J., Sanna, N., Sollima, A., van der Marel, R. P., & Watkins, L. L. (2022). Dynamics in the outskirts of four Milky Way globular clusters: it's the tides that dominate. *Monthly Notices of the Royal Astronomical Society*, 519(1), <https://academic.oup.com/mnras/article-pdf/519/1/192/48180315/stac3566.pdf>, 192–207.
 <https://doi.org/10.1093/mnras/stac3566>
- 2 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>
- 3 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>