

# ANDREW SCOTT GARDNER

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CONTACT	<p>andrew@sentinelpeak.com Voice/SMS/Signal: 1.520.275.2148 // Tucson, AZ, USA <a href="https://www.linkedin.com/in/andrewsgardner">linkedin.com/in/andrewsgardner</a></p>
WORK	<p>PRINCIPAL SYSTEMS PROGRAMMER. <a href="#">LUNAR AND PLANETARY LABORATORY</a>, UNIVERSITY OF ARIZONA. 2012/01 - PRES.</p>
2012 - PRES.	<p><b>Science operations, automation, and data analysis.</b> ⟨1⟩ OSIRIS-REX: Operations engineering. Automated UI testing of Java Swing application with Jemmy. Process automation with web-based and desktop tools. ⟨2⟩ Mars Odyssey: Servlets. Swing. Fortran, IDL, and MATLAB for data reduction and analysis. Preparation and verification of data sets for NASA PDS. ⟨3⟩ Mars Science Laboratory (Curiosity) DAN: Science operations. Query builder with Java FX. Data sets for NASA PDS. ⟨4⟩ MESSENGER GRS and XRS: Servlets. Query builder with Swing. Data quicklook application with Netbeans RCP. Data reduction in C++. Data sets for NASA PDS. ⟨5⟩ LRO LEND: Servlets. Query builder with Swing. MATLAB and Oracle Pro/C for data reduction. Data sets for NASA PDS. Small cluster operations with Debian GNU/Linux: NFS4, Kerberos, torque, MATLAB.</p> <p>SENIOR SOFTWARE ENGINEER II. <a href="#">RAYTHEON</a>. 2001/07 - 2011/12.</p>
2008 - PRES.	<p><b>BSP REA, PCI Express system integrator, algorithm analyst. RMS Missile Advanced Processing Systems (MAPS).</b> ⟨1⟩ REA for 32b PowerPC BSP for VxWorks 6. PCI Express switch system integration with nontransparent bridge and heterogeneous VxWorks targets. ⟨2⟩ Analysis and optimization of image processing, computational linear algebra on Intel, Freescale, and TI architectures.</p>
2005 - PRES.	<p><b>Instructor, Raytheon Learning Institute. RMS Software Center.</b> ⟨1⟩ Design, develop, and deliver Embedded Software Practicum, a lab-based introduction to embedded software development. ⟨2⟩ Develop and deliver Integration and Test, a unit of Embedded Software for Missiles. Discussion of methods and procedures of system integration.</p>
2006 - 2009.	<p><b>Software integration REA, Small Diameter Bomb, Increment II. RMS Advanced Programs.</b> REA for 32b PowerPC VxWorks 6 BSPs. Software for high throughput messaging over PCI Express. System integration for captive flight test and flight line test.</p>
2006 - 2008.	<p><b>Software Architect, RMS Software Center.</b> ⟨1⟩ Lead evaluator for real-time operating systems trade study. ⟨2⟩ Lead evaluator for real-time, multicore middleware trade study. ⟨3⟩ Co-author of reference architecture structures and standards documents.</p>
2001 - 2006.	<p><b>Embedded Software and HWIL Simulation Technical Lead. Strike Systems Software, Tomahawk Cruise Missile.</b> Technical and team lead for <a href="#">Digital Scene Matching Area Correlator</a> (DSMAC) navigation aiding subsystem software development. ⟨1⟩ Re-host flight software to new TI DSP. ⟨2⟩ Design and verification of replacement real-time camera simulation for real-time, hardware-in-the-loop test. ⟨3⟩ Designed and developed automated test and verification system.</p>

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EDUCATION	<p><b>M.L.S.</b> Legal Studies with a concentration in human rights law. <a href="#">University of Arizona, James E. Rogers College of Law</a>. <i>In progress. Expected December, 2020.</i></p> <p><b>M.Eng. Electrical and Computer Engineering.</b> <a href="#">University of Arizona, Dept. of Elec. and Comp. Engineering</a>, May, 2010. Capstone project: <i>System observability: Understanding hardware behavior after deployment.</i></p> <p><b>B.S. Electrical and Computer Engineering.</b> <a href="#">Carnegie Mellon University</a>, 2001.</p> <p><b>B.A. Spanish.</b> <a href="#">Carnegie Mellon University</a>, 2001.</p>
PUB.	<p>Jong Chul Lee, Andrew S. Gardner, Roman Lysecky, <a href="#">Hardware Observability Framework for Minimally Intrusive Online Monitoring of Embedded Systems</a>, ECBS, pp.52-60, 2011 18th IEEE International Conference and Workshops on Engineering of Computer-Based Systems, 2011.</p> <p>Bodnarik, Mitrofanov, Boynton, Hamara, Harshman, Gardner, et. al. <a href="#">LEND CSETN Circular and Elliptical Orbital Data Processing</a>, 45th Lunar and Planetary Science Conference, 2014.</p>
CERT.	<p><b>Raytheon Engineering Leadership Development Program. 2006 - 2008.</b> Budgeting, earned-value management, team formation, managing innovative organizations.</p> <p><b>Certified Six Sigma Green Belt</b>, American Society for Quality. December, 2011.</p> <p><b>Enterprise Information Security Certificate</b>, Univeristy of Arizona, Eller College of Business. May, 2018.</p>
VOLUNTEER	<p>Vice chair of the <b>Technology Oversight Committee</b>. Tucson Unified School District. 2013/05 - 2017/07. Review and oversight of purchasing and policies of the Technology Services department of Pima County's largest school district.</p>

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