<u>**CURRICULUM VITAE**</u>

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<u>**GENERAL**</u>:
I am a versatile technical individual who learns quickly. I have the following expertise:

1. Programming languages—Ada, Scala, C++, C, Java, and many others.
2. High integrity systems programming—SPARK/Ada.
3. Sensor and embedded systems—Wireless sensor networks, nesC and TinyOS programming, and the CubeSat platform.
4. Software development—Application programming, network programming, parallel programming, and system programming.
5. System administration—Linux and Windows, including troubleshooting network problems at the packet level.

<u>**EDUCATION**</u>:
1. University of Vermont, Ph.D in Computer Science, 2014. Research interests are in the area of computer security and programming languages, with a focus on topics in distributed authorization. Dissertation: *Trust Management in Distributed Resource Constrained Embedded Systems*.
2. University of Illinois, MSEE, 1985. Master's thesis: *Band Diagram Calculation for the Real-Space Transfer Heterojunction Oscillator.* August 1984.
3. Western New England College, BSEE, 1982. Graduated with a GPA of 3.93/4.0.

<u>**EMPLOYMENT HISTORY**</u>:
1. 1986–Present, Professor, Vermont Technical College.
   a. CubeSat Laboratory Software Director (2009-present). Directed students working on high integrity flight software for CubeSat spacecraft using SPARK.
   b. Served on X3J16 (1990–1993), the technical committee charged with standardizing C++.
   c. Provided industry tutorials and workshops in SPARK and C++.
   d. Conceived, developed, and delivered courses in computer engineering technology, software engineering, and information technology. Examples include: Embedded systems, the Internet of Things, database systems, big data, C/C++ programming, spacecraft software, network programming, algorithms & data structures, compiler design, system administration, computer security, operating systems, parallel programming, and microprocessor systems.
   e. Acted as system administrator for the VTC's NetWare and Unix systems.
   f. Designed, coded and deployed custom software for Vermont Interactive Television in C++.

2. Spring semester 2008, Adjunct Faculty, University of Vermont. Programming Languages.

AWARDS/HONORS:
1. 2013 and 2007—University of Vermont Department of Computer Science Graduate Award.
2. 2005—Initiated into the ΥΠΕ (Upsilon Pi Epsilon) computer science honor society.
3. 1982—Initiated into the ΣΒΤ (Sigma Beta Tau) engineering honor society.

PUBLICATIONS:
1. *The Use of SPARK in a Complex Spacecraft.* Proceedings of the High Integrity Language Technology workshop (HILT-2016). Pittsburgh, PA, October 2016.
2. *High Integrity Software for CubeSats and Other Space Missions*. Proceedings of the 66th International Astronautical Congress. Jerusalem, Israel, October 2015.
3. *Building High Integrity Applications with SPARK.* A textbook published by Cambridge University Press, August 2015
4. *Trust Management in Distributed Resource Constrained Embedded Systems.* Ph.D dissertation, University of Vermont, January 2014
5. *Scalaness/nesT: Type Specialized Staged Programming for Sensor Networks.* Proceedings of the Twelfth International Conference on Generative Programming Concepts & Experiences. Indianapolis, IA, October 2013
6. *A SPARK/Ada CubeSat Control Program.* Proceedings of Ada Europe 2013. Berlin, Germany, June 2013
7. *SpartanRPC: Secure WSN Middleware for Cooporating Domains.* Proceedings of the Seventh IEEE International Conference on Mobile Ad-hoc and Sensor Systems. San Francisco, CA, November 2010
8. *Use of SPARK in a Resource Constrained Embedded System.* Proceedings of the ACM Conference on Ada and Related Technologies. Saint Petersburg, FL, November 2009
9. *Authorization in Trust Management: Features and Foundations*. ACM Computing Surveys. 40(3). pp 1-48. 2008
10. *Risk Management for Distributed Authorization*. Journal of Computer Security. 15(4). pp 447-489. 2007
11. *Risk Assessment in Distributed Authorization*. Proceedings of the Third ACM Workshop on Formal Methods in Security Engineering. Fairfax, VA, November 2005
12. *Experimental Study of the Frequency Limits of a Resonant Tunneling Oscillator*, Applied Physics Letters. 48(6). pp 422-424. February 1986
13. *Stable and Unstable Current-Voltage Measurements of a Resonant Tunneling Heterostructure Oscillator*, Applied Physics Letters. 47(9), pp 986-988. November 1985
14. *Microwave Admittance Characterization of GaAs-$Al_xGa_{1-x}As$ Resonant Tunneling Heterostructures*, Proceedings of the Sixth Biennial Conference on High Speed Semiconductor Devices, Cornell University, July 1985
15. *Resonant Tunneling Oscillations in a GaAs-$Al_xGa_{1-x}As$ Heterostructure at Room Temperature*. 46. pp 508-510. March 1985

PRESENTATIONS
1. SPARK/Frama-C Day, CubedOS: *A SPARK Message Passing Framework for CubeSat Flight Software*, with Carl Brandon, May 30, 2017, Paris, France
2. Spacecraft Flight Software Workshop: *High Integrity Software for Spacecraft*, with Carl Brandon, October 29, 2015, Laurel, MD.

PROFESSIONAL MEMBERSHIPS:
1. 2004 to present—Member of the Association for Computing Machinery
2. 1982 to present—Member of the Institute of Electrical and Electronics Engineers

TUTORIALS
1. Ada Europe 2018: Tutorial on SPARK 2014, Lisbon, Portugal
2. Ada Europe 2017: Tutorial on SPARK 2014, Vienna, Austria
3. High Integrity Languages and Technologies 2014 (HILT-2014): Tutorial on SPARK 2014, with John McCormick, Portland, OR

OTHER INTERESTS:
1. 2007–2011, Maintainence of the Open Watcom open source C/C++ and FORTRAN compiler suite