

# Rowin Andruscavage

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**Objective:** Systems design, analysis, and optimization using simulation and rapid prototyping.

**Skills:** **Computing:** UNIX (clusters, Linux, SUN, SGI), VMware, Python, PERL, Java, C/C++, Matlab, SQL, office suites, web publishing; **Analysis & Visualization:** UML, XML Schema, FEA, 3D rendering & animation, graphics manipulation/scripting; **Integration:** open source, network monitoring/tuning, hardware, ADC/DAC interfaces; **AV Systems:** Vista Systems Spyder, ThinkLogical fiber KVM switching

**Experience:** **Systems Engineer**, SAIC, Naval Surface Warfare Center, Carderock, MD 2009-Present

- Develop, deploy, & support submarine sonar system training simulator consisting of hundreds of nodes from myriad partners. Detailed work with several high performance computational and graphics clusters.

**Systems Architect**, The Boeing Company - Integrated Defense Systems, Arlington, VA 2004-2009

- Advanced Modeling and Simulation technical demonstration showcase for prominent government, international, and industry visitors.
- Systems architect for sophisticated AV switching, network, control, and multi-site content delivery systems. Deployed production system upgrades (including conversion from analog to HD digital streaming video pipeline) during heavy event schedule. Designed and deployed flexible network and fiber infrastructure to support multiple simultaneous events at different classification levels using permanent and visiting equipment configurations. Responsible for design and installation of 4 remotely-operated satellite viewing sites across country.
- Test & evaluation of new components deployed across enterprise. Optimize and document compression and network settings for standard configurations. Establish training, knowledge base, and community of practice collaboration sites for other technical staff across enterprise. Presented technical architecture and common tools at BTEC16 (Boeing Technical Excellence Conference).
- Deployed baselined Linux servers on each network to handle core services (DHCP + DNS, email alerts, Nagios service monitoring, RAID file server with Samba CIFS, FTP, and apache web access, Squid proxy, SVN repository, mirrored via ssh+rsync through available VPN gateways. Developed customized KNOPPIX LiveCDs for cross-platform systems test, maintenance, and network backup/restore. Implemented and documented scripts for event automation and synchronization, including "VNCequencer" setup for connecting several VNC sessions on cue, adding labels, controlling total bandwidth with wondershaper interface to iptables, and performing record/playback. Implemented PC AV capture, MPEG4 compression, real-time multicast transmission, record/playback using VideoLAN.

**Systems Engineer**, The Boeing Company - Air Traffic Management, McLean, VA 2001-2004

- Director of high profile R&D laboratory. Defined concept of operations & resource allocation for various engineering teams.
- Development and integration of equipment & AV system for software development, collaboration, and demonstrations of GCNSS (Global Communication, Navigation, and Surveillance System) contract for FAA. Configured applications and network tuning for satellite data communications with Connexion

by Boeing test aircraft, depicting near realtime ADS (Automated Dependent Surveillance) reporting and visualization in FlightViz, video surveillance, and WiFi communications with on-board federal air marshal devices.

- Worked with IT and Network teams to deploy CDMnet access to ETMS (Enhanced Traffic Management System) data and tools. Wrote & deployed ASDI (Aircraft Situation Display to Industry) datafeed logging, archive, and proxy service script displayed using AADS (Aircraft Activity Display System).
- Software engineering of DES (discrete event simulation) engine supporting a team of 20 simulation software developers. Contributed comprehensive unit conversion & common constants library, coordinate transformations, and XML schema & XSLT for data logging and export utilities for visualization in TAAM (Total Airspace and Airport Modeler) and other analysis tools. Implemented remote client access, configuration management checkout and build process using Clearcase, Design of Experiments directory layout on SUN 24-node HPC simulation server. Set up remote access using VNC (Virtual Network Computing) and cygwin XFree86 supporting OpenGL 3D rendering over the network, and implemented fast and consistent mirroring across East and West Coast development environments using rsync + ssh. Completed DOORS training for requirements management.
- Data analysis: mined BTS (Bureau of Transportation Statistics) website data using perl and octave scripts, matching separate arrivals and departures data to assemble and perform statistical analysis on flight times between airports. Developer on small team of Java programmers to create web-based frontend to FAA Advisories database.

**Prod. Dev. Engineer**, PATMOS Int'l Corp., Ocean City, MD 2000

- Design & implementation of hardware and software systems for scaleable, low-maintenance, high-availability supercomputing clusters.
- Architected and prototyped serviceable blade system using RAID, nbd (now drbd), HA (high availability) Linux clustering with MOSIX process-migration patches, PVM/MPI, fibre-channel HBAs, diskless imaging using NFSroot, on top of unique recursive network topology

**DevBusiness.com Webmaster**, World Bank, Washington DC 1999-2001

- Upgraded ColdFusion frontend and database backend to use new streamlined schema.
- Worked closely with management to improve & update site serving 2,000+ clients.

**Undergraduate Research**, Cornell University, Ithaca, NY 1996-99

- Refined stroboscopic photography instrumentation & data collection procedures used to measure physical properties governing granular flow in microgravity
- Developed image processing software in perl and gimp-script to automate data analysis

**Cornell R/C Aircraft Team** 1999

- Batch in-flight video processing from on-board camera. Developed post-processing image analysis scripts in perl and gimp-script to independently determine attitude and correlate to recorded GPS position data

**Cornell Rigid Airfoil Team**, catamaran wingsail watercraft 1996-97

- Performed CFD (computational fluid dynamic) analysis of multi-element cambered airfoil.
- Constructed 1/6 scale articulating model.
- Preparation and test sail of previous adjustable-camber carbon-fiber wingsail vessel on Cayuga lake.

**Homebuilt aircraft**

1994-96

- Machined and assembled wing for the *Quail*, a single-seat aluminum airplane
- Built and flew radio controlled glider and gas powered models. Practiced on PC sim and successfully landed on maiden flight.

*Education:* **EIT**, MD Dept. of Labor, Licensing, and Regulation  
Passed Fundamentals of Engineering Exam

October 2009

**University of Maryland**, College Park, MD

May 2007

M.S. Systems Engineering, conc. in wireless networks

Thesis: *Arcology Optimization and Simulation Framework*

Analyzed optimal routing for small but recursively scaleable smart transit networks. Design of experiments trade studies using Python, SimPy, LP\_Solve, and yEd for simulation and visualization.

**Cornell University**, Ithaca, NY

May 2001

B.S. Mechanical & Aerospace Engineering  
Dean's List 4 semesters

**Eleanor Roosevelt HS**, Greenbelt, MD

June 1996

Science & Technology Magnet Program

*Activities:* **Taekwondo** : 2<sup>nd</sup> degree black belt, instructor

1992 - Present

**Paper aircraft** : instructional website, 2008 New Millennium Paper Airplane Contest winner in distance category.

1998-Present

**Linux.com/tuneup** volunteer for performance computing site.

1999-01

**Cornell Student Linux User's Group** : President, web page manager

1996-99

**CU ASME** : PR, web page manager

1996-99