



# Richard Fozzard

## Software Artist and Forward Thinker

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Latest version at <http://fozzard.com/resume>  
(<http://fozzard.com/resume>)  
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(<http://fozzard.com/resume.pdf>)

## Summary

**Success** in the designing, building and delivering of exciting and pioneering products in one or more of:

- **Advanced, usable and responsive user interfaces**
- **Information architecture, especially Internet/Web**
- **Scientific, medical, imaging, data storage, AI applications**

Creative, yet methodical. Skeptical, yet curious. Passionate, yet easy to get along with. Effective as team lead, or as team member. Fast learner. Early adopter. First, I design for usability, reliability, testability, scalability, maintainability. Then, I code.

PS: This resume itself is an example of a responsive page layout; try looking at it on a big screen *and* a phone.

## Experience

7/05 - present	<b>Univ. Colorado</b> <a href="http://www.colorado.edu/">(http://www.colorado.edu/)</a> <b>CIRES</b> <a href="http://cires.colorado.edu/">(http://cires.colorado.edu/)</a> <b>NOAA</b> <a href="http://www.noaa.gov/">(http://www.noaa.gov/)</a> <b>NGDC</b> <a href="http://www.ngdc.noaa.gov/">(http://www.ngdc.noaa.gov/)</a> <b>Enterprise Data Systems</b>	<i>Computer Scientist/Information Architect</i>
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Research Faculty at University of Colorado, Boulder in the Cooperative Institute for Research in Environmental Science (CIRES). Work with NOAA National Geophysical Data Center (NGDC, now NCEI) to do science data and metadata ingest, archival, management and visualization. Full stack Agile (Scrum & Kanban) development of web apps, REST web services, back end processing and more. Using Java, Groovy/Grails, XML/XSLT, Javascript/JSON/Ajax/Bootstrap/JQuery, Unix shell, Perl, Struts/Tomcat, JSP, Oracle, MySQL/MariaDB, Spring and more as appropriate. Web presence and UX analytics. Personnel management (2006-2012) for 7 other CIRES faculty in the Enterprise Data Systems group.

- Creator and technical lead for EMMA Enterprise Metadata Management Architecture (<http://www.ngdc.noaa.gov/metadata/emma/>) (Grails apps Docucomp, CEdit, unix cron & perl, Resolver Java app, XSLT to HTML/JS, SQL, ESRI Geportal) Metadata component server, record and collection services, XSLT record views, customizable metadata form editor.
- Lead developer for Geomag World Magnetic Model calculators (<http://www.ngdc.noaa.gov/geomag-web/>) (Grails app, unix daemon to C exe, mobile web page) Most popular pages on NGDC web site (~40k hits/day, 400k unique users/year (<http://www.ngdc.noaa.gov/eds/logs/geomag/geomag2014/geomag.analysis.html>))

## Education

### Univ. of Colorado, Boulder

*M.S. Computer Science*  
Artificial intelligence, neural networks and user centered design.

Thesis: *A Connectionist Expert System That Actually Works.*

(<http://papers.nips.cc/paper/135-a-connectionist-expert-system-that-actually-works.pdf>) Solar flare detection with a neural network.

(show more/less **CU Boulder**)

### Stanford University

*B.S., M.S. Biology*  
Neurophysiology and biochemistry plus advanced chemistry, physics, electronics, psychology

(show more/less **Stanford**)

## Skills

**Programming languages:** Java, XML/XSL, Perl, JavaScript/Ajax, C, Unix shell, SQL, HyperTalk, Fortran, LISP, SAS/SCL, various assemblers.

### Full stack Web development:

Groovy/Grails, REST web services, JSP, Struts, Tomcat, CGI. Oracle, MySQL/MariaDB Some Unix (Linux, Solaris, FreeBSD) Web server administration (Apache, NCSA httpd, BEA Weblogic).

**Agile** (Scrum & Kanban) development methodology since 2011

### Web presence and UX analytics

- Original concept and UX consultant (no coding) for CrowdMag crowd-sourced magnetic field app (<http://www.ngdc.noaa.gov/geomag/crowdmag.shtml>) (iOS, Android)
- Lead developer for TPIO/IOOS ISO metadata harvesting, metrics web services and pages (ncISO, Grails, XSLT, Java, unix cron and perl, HTML/Ajax) e.g. Data Management Dashboard (<https://sites.google.com/a/noaa.gov/edm-dashboard/home?pli=1>) (NOAA login) or PacIOOS Metadata WAF (<http://www.ngdc.noaa.gov/metadata/published/NOAA/IOOS/PacIOOS/iso/>) (no login)
- Development and maintenance on several NGDC webapps: IDB, NNDC, Wist, Geoportal, Solr, ECS-catalog, NEXT (Struts, Grails, RabbitMQ) e.g. Volcano Database Search (<http://www.ngdc.noaa.gov/nndc/struts/form?t=102557&s=50&d=50>)
- Generate and analyze monthly and custom web statistics from server logs and Google Analytics, e.g. NGDC Web sites, January 2015 (<http://www.ngdc.noaa.gov/eds/logs/LogAnalysis/WebServers/ngdc.2015/ngdc.01/ngdc.analysis.html>)
- Conceived and built PageWatcher (<http://pagewatcher.ngdc.noaa.gov>) tool to monitor web pages and trigger actions (e.g. email) based on Web content.

(show more/less **Experience**)

## Publications

**"mEmE: Metadata Editing Made Easy"**, Shah, A., Milan, A., Fozzard, R., Kozimor, J., Aubrey, M., *CIRES Rendezvous*, Boulder CO, May 2014 [

<http://cires.colorado.edu/events/rendezvous/2014/posters/detail.php?id=1768>

(<http://cires1.colorado.edu/events/rendezvous/2014/posters/> ).

**"What's the Meta with your Data? "**, Shah, A., Habermann, R.E., Milan, A., Fozzard, R., Neufeld, D., Kozimor, J., Aubrey, M., *CIRES Rendezvous*, Boulder CO, May 2013 [

<http://cires.colorado.edu/events/rendezvous/2013/posters/detail.php?id=1496>

(<http://cires1.colorado.edu/events/rendezvous/2013/posters/detail.php?id=1496> ).

**"GeoNetwork target"**, Fozzard, R., L., *Data Center Enterprise Metadata Solution Workshop*, Asheville NC, August 26, 2009 [ [http://www.ngdc.noaa.gov/wiki/index.php?title=GeoNetwork\\_target&oldid=3747](http://www.ngdc.noaa.gov/wiki/index.php?title=GeoNetwork_target&oldid=3747) ([http://www.ngdc.noaa.gov/wiki/index.php?title=GeoNetwork\\_target&oldid=3747](http://www.ngdc.noaa.gov/wiki/index.php?title=GeoNetwork_target&oldid=3747)) ].

**"Using Metadata to Automate the Process from Collection to Online Access for a Multibeam Bathymetric Data Base"**, Virden, B, K Tanaka, R Fozzard (CIRES), R Arko (LDEO), *Geological Society of America Annual Meeting*, Denver CO, October 31 2007 [

[https://gsa.confex.com/gsa/2007AM/finalprogram/abstract\\_131930.htm](https://gsa.confex.com/gsa/2007AM/finalprogram/abstract_131930.htm)

([https://gsa.confex.com/gsa/2007AM/finalprogram/abstract\\_131930.htm](https://gsa.confex.com/gsa/2007AM/finalprogram/abstract_131930.htm) ).

**"WebBook: "Thumbing" through a good Web site"**, Fozzard, R. in *NOAA WebShop '97*, Silver Spring, MD, Oct. 1997 (This won "Best Web Page in NOAA" award for 1997.) Original paper not available online; related article: [

<https://web.archive.org/web/20010428193558/http://wist.ngdc.noaa.gov/webbook/>

(<https://web.archive.org/web/20010428193558/http://wist.ngdc.noaa.gov/webbook/> ) ]

**"Real-Time Quality Control Of Hourly Surface Observations At NOAA's Forecast Systems Laboratory"**, Miller, P., Fozzard, R. in *10th Conference on Numerical Weather Prediction*,

Portland, OR, July 1994 Original paper not available online; related article referencing this: [

[http://fxa.noaa.gov/publications/10th\\_SMOI\\_98/Miller-et-al.SMOI98.html](http://fxa.noaa.gov/publications/10th_SMOI_98/Miller-et-al.SMOI98.html)

([http://fxa.noaa.gov/publications/10th\\_SMOI\\_98/Miller-et-al.SMOI98.html](http://fxa.noaa.gov/publications/10th_SMOI_98/Miller-et-al.SMOI98.html)) ]

**"COADS Metalog: Dynamic COADS documentation"**, Moninger, W., Fozzard, R., Woodruff, S., Slutz, R. in *Proceedings of the 1992 International COADS Workshop*, Boulder, CO, January 1992 [ <http://icoads.noaa.gov/Boulder/Boulder.Moninger.pdf> (<http://icoads.noaa.gov/Boulder/Boulder.Moninger.pdf>) ]

**Scientific training** (biology, chemistry, physics, mathematics) in addition to computer science.

**Rigorous product design and development** from conceptualization and business requirements through UML/OOA design through coding and documentation to test, release and support.

**User-centered design** and rapid prototyping and delivery of portable applications and repurposing of documents across Windows, Macintosh, Unix/X, World-Wide-Web and hardcopy.

**AI techniques:** neural networks, expert systems, and hypertext applications for: forecasting, pattern recognition, diagnosis, information retrieval, data/image visualization

**Storage Network (SAN)** management and product development using native and SMI tools

**Image processing and real-time** system design and implementation

**The SAS System**, Reporting and screen design using SCL/FAME.

**"A Connectionist Expert System That Actually Works"**, Fozzard, R., Ceci, L., Bradshaw, G, *Advances in Neural Information Processing Systems*, D. Touretzky, Ed., Morgan Kaufmann 1988 (refereed book article) [ <http://papers.nips.cc/paper/135-a-connectionist-expert-system-that-actually-works.pdf> ] (<http://papers.nips.cc/paper/135-a-connectionist-expert-system-that-actually-works.pdf>) ]

**"LVEDGE: Knowledge Based Heuristic for Border Finding of Left Ventricular Cavity in Cardiac Digital X-Ray Images"**, Fozzard, R., *SPIE Technical Symposium on Optics, Electro-Optics, and Sensors*, April 1988 SPIE Press (<http://spie.org/Publications/Proceedings/Paper/10.1117/12.947061>) [ <http://spie.org/Publications/Proceedings/Paper/10.1117/12.947061> ].

## References

As a courtesy to my references, please allow me to notify them that you will be contacting them.

Martin Aubrey	Senior Software Engineer, EMMA ( <a href="http://www.ngdc.noaa.gov/metadata/emma/">http://www.ngdc.noaa.gov/metadata/emma/</a> ) project	NOAA/CIRES/CU, Boulder, CO
Anna Milan	EMMA ( <a href="http://www.ngdc.noaa.gov/metadata/emma/">http://www.ngdc.noaa.gov/metadata/emma/</a> ) Product Owner, Metadata Guru	NOAA/CIRES/CU, Boulder, CO
Heather McCullough	Information Specialist, Web designer, Online Committee Chair	NOAA/NGDC, Boulder, CO
Ken Tanaka	Senior Software Engineer, Agile Scrummaster	NOAA/CIRES/CU, Boulder, CO
David Fischman	Geomagnetic Calculators ( <a href="http://www.ngdc.noaa.gov/geomag-web/">http://www.ngdc.noaa.gov/geomag-web/</a> ) Product Owner, CIRES Science Advisor, Multibeam Data Manager, and more	NOAA/CIRES/CU, Boulder, CO
Manoj Nair, Ph.D.	Global Magnetic Models ( <a href="http://www.ngdc.noaa.gov/geomag/">http://www.ngdc.noaa.gov/geomag/</a> ) Scientist	NOAA/CIRES/CU, Boulder, CO
Barry Eakins, Ph.D.	Chief Scientist of NOAA/MGG ( <a href="http://www.ngdc.noaa.gov/mgg/">http://www.ngdc.noaa.gov/mgg/</a> ), and CIRES Lead Supervisor	NOAA/CIRES/CU, Boulder, CO
Rob Prentice	Senior Software Engineer	NOAA/CIRES/CU, Boulder, CO
Marcus Cole	Cartographer and GIS specialist	NOAA/NOS, Boulder, CO
Carla Moore	Marine Geology Data Manager, NGDC Web Site Coordinator	NOAA/NOS, Boulder, CO
Dan Price	Lt. Commander NOAA Corps, Bathymetry Program Manager	NOAA/NGDC, Boulder, CO
David Rodziewicz	Lt. JG NOAA Corps, Hydrography Data Manager	NOAA/NGDC, Boulder, CO
William Moninger, Ph.D.	Director Artificial Intelligence, Forecast Systems Laboratory	NOAA/FSL (now ESRL/GSD), Boulder, CO
Greg Comeau	Principal Architect	Webb and CreekPath, Boulder, CO (now at HP)
Michael Kearney	Principal Software Engineer	CreekPath and Qualstar, Boulder, CO (now at

		EMC)
Fred Puls	VP Accelx Development	Webb Interactive, Boulder, CO (now at Charles Schwab)
Tom Bender	Chief Architect	Webb Interactive, Boulder, CO (now at History Spots)
Paul Smolensky, Ph.D.	Professor of Computer Science	University of Colorado, Boulder (now at Johns Hopkins)
David Gustafson, Ph.D.	VP, Advanced Development	Fischer Imaging, Denver, CO (now Medical Device Consultant, Seattle)

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