**Professional Summary**

|  |  |
| --- | --- |
| Senior engineer with experience in science and engineering topics, such as physics, math, electrical engineering. Proficient with many computer languages, and will learn any language required for position. Expert at project overview and means to complete assignments. | |
| * MatLab, including GUI’s * Python and Django * Algorithm Development * Estimation filters | * C++ & C# * Radar and optical tracking analysis * Project Management * Geophysics, space physics, and geology |

**Security Clearance**

Previous Secret, 2009-2014

**Education**

M.S., Engineering Management; Minor, Aerospace Engineering, Florida Tech., 2008.

Ph.D., Geophysical Engineering; Minor, Physics, Colo. Sch. of Mines, 1999.

M.S., Geophysical Engineering; Minor, Electrical Engineering, University of Arizona, 1990.

B.S., Geophysical Engineering; Minors, Electrical Engineering & Geology, Colo. Sch. of Mines, 1987.

**Professional Experience**

**Phenocryst Consulting, Boulder, CO 11/13 – Present**

**Web Design Projects /Tutor**

* Designing websites for disseminating information to select audiences and to the public, and allowing user participation through automated login accounts.
  + - * Worked extensively with server-side MySQL database and controlling Python routines, also with and client-side Java-script aided HTML and CSS scripting.
      * Ported MatLab programs and algorithms to C# for stand-alone functionality.
      * Tutoring geophysics, and computer languages and skills.

(Windows, Linux (Ubuntu); HTML, CSS, Python, Django, Javascript, C#, C++; NetCDF)

**US Naval Air Warfare Station, China Lake, CA 02/09 – 05/13**

**Physicist, Interdisciplinary Engineer, and Data Analyst**

* Knowledgeable with aircraft tracking systems, i.e., both real-time and post flight time-space-position-information (TSPI) display, storage, and analysis programs.
  + - * Created and ran a quality assurance program for tracking instrument data in the test and evaluation group.
* Provided TSPI systems engineering improvements and technical solutions with current best practices and insights.
  + - * Analyzed tracking and surveillance instrumentation datasets.
      * Improved and streamlined existing analysis programs and methodologies.
* General subject matter expert in math, physics, and systems engineering.
  + - * Designed data analysis flow plan, along with easy to use GUI analysis programs in MatLab, C#, HTML and VB script applets.
      * Created methods and algorithms to track trajectory positions, and estimate multiple tracking instrument data with Kalman filtering techniques.
* Proficient in writing documentation and featuring it on websites.
* Developed proposals, charters, requirements, designs, and test documentation throughout the engineering lifecycle.
* Conveyed progress of systems engineering activities and insight to configuration control boards, systems engineering meetings, and various technical exchanges to share information into ongoing tasks.
* Provided team leadership in the accomplishment of assigned tasks, projects, and programs.

(Quality assurance program, GPS processing, radar and optical tracking systems; MATLAB, HTML, VB scripting, C++, C#; TDOP, special processing programs)

**Metro. State College, Denver, CO 1/2007 – 12/2007**

**Adjunct Professor**

* Taught undergraduate classes in Navigation and Map Use in the Department of Earth and Atmospheric Sciences. Integrated GPS and GIS into the structure of both.

(ArcMap, MatLab, Keyhole/Google Earth)

**Webster University, Boulder, CO 1/2007 – 5/2007**

**Adjunct Professor**

* Taught graduate aerospace classes in space environment, astrodynamics, and fundamental spacecraft design.

(Satellite Tool Kit, MatLab)

**Embry-Riddle Aeronautical University, 1/2007 – 12/2007**

**F.E. Warren AFB, Cheyenne, WY Denver, CO, & Schriever AFB, Colorado Springs**

**Adjunct Professor**

* Taught graduate aerospace classes in Space Applications, Earth Observation and Remote Sensing, Space Mission and Launch Operations, and GPS/GIS.
* Won a Faculty Course Development award from the Wyoming NASA Space Grant Consortium in 2005 to develop a Global Positioning System (GPS) course for Embry-Riddle.
* Project development award from Embry-Riddle to design and build a navigation system with IMU for tracking launched payloads. Managed students to assist on project development.
* Served on graduate capstone project committees, advise students, and referee results.

(MatLab, Keyhole/Google Earth, Worldwind, SOAP)

**Electromagnetic Applications, Inc., Lakewood, CO 05/04 – 05/05**

**Scientist and Engineer**

* Investigated GPS multipath problems for FAA LAAS proto-system intended for auto-land feasibility and suggested solutions. Examined signal to noise characteristics from ground and built interference. Compared code and carrier errors (CMC) from numerous GPS satellites in an airport environment.
* Evaluated GPS antenna characteristics such as gain patterns and phase centers on linear and polarized models. Modeled GPS wave scattering on rough surface as random dipole distributions to evaluate errors and noise.

(MatLab, Fortran, Cygwin; GPS analysis and processing, modeling)

**Technical Skills**

Platforms: Linux, Windows

Languages: C#, Javascript, Python, Django, Fortran, SQL, C++

Development Tools: PyDev/Eclipse, Geany, ArcMap, Microsoft NET

Mathematical Applications: MatLab, Mathematica

Technical writing and editing

**Publications** (Space physics)

Le, G., P. J. Chi, W. Goedecke, C. T. Russell, A. Szabo, S. M. Petrinec, V. Angelopolous, G. D. Reeves, and F. K. Chun, Magnetosphere on May 11, 1999, the day the solar wind almost disappeared: II. Magnetic pulsations in space and on the ground, *Geophysical Research Letters, 27,* no. 14, 2165-2168, July 15, 2000.

Russell, C. T., P. J. Chi, V. Angelopoulos, W. Goedecke, F. K. Chun, G. Le, M. B. Moldwin, and G. Reeves, Comparison of three techniques of determining the resonant frequency of geomagnetic pulsations, *J. Atmos. Solar Terr. Phys., 61,* 1289-1297, 1999.

Green, A. W., E. W. Worthington, T. A. Plyasova-Bakounina\*, A. Kormendi\*, L. Hegymegi\*, W. Goedecke\* and Z. Voros\*. Field line resonance studies in North America and Central Europe. *Geophysical Transactions = Geofizikai Kozlemenyek = Geofizicheskiy Byulletin', 42,* no. 3-4, 181-193, 1999.

**Additional Training**

NavTech GPS Classes: Fundamentals and Kalman filtering.

OSHA Hazardous Waste Operations and Emergency Response 40 Hour Training Program class.

**Other activities**

Organized annual event with hundreds of participants for over a decade that also raised money for charitable causes.