DICK JACKSON

dick@d-jackson.com
+1 (250) 220-6117
Victoria, BC, Canada

SUMMARY OF QUALIFICATIONS

Proven success in completing software consulting projects in many scientific domains. Strong background in IDL (Interactive Data Language by Harris Geospatial Solutions), other high-level languages and GUI design. Ability to interact effectively with collaborators from diverse fields and to maintain continuing relations with clients.

WORK EXPERIENCE

Dick Jackson Software Consulting Inc. **Dec. 1999 - present**
Victoria, BC (and formerly D-Jackson Software Consulting in Calgary, Alberta)
Owner, Software Consultant

Analyzed custom scientific software needs and delivered data analysis and visualization solutions for more than 20 clients. Collaborated on research ideas with clients. Contributed to clients' skills with IDL and software development techniques through informal mentoring and customized classroom training.

Past projects include developing interactive IDL applications for:

- computing, analyzing and viewing magnetic field interaction with CAD geometry for a large nuclear fusion power facility;

- working with Lidar point cloud data, using machine learning libraries in Python for object detection;

- retrieving satellite altimetry datasets and graphically displaying selected variables on a map display;

- viewing multichannel 3-D datasets from super-resolution microscopy;

- scheduling console for automating operation of radar and acoustic systems for monitoring bird flight;

- interactive 3-D display of the area around an airport to illustrate zones of risk of bird collisions to aircraft on takeoff and landing;

- analysis of timing of forest leaf appearance from satellite imagery;

- generating maps with colour coding and overlaid vector data from Lidar instruments, able to indicate numerous layers of wind and data quality information, as well as advanced data subsetting options;

- image processing, 3-D surface visualization/analysis and digital imaging/analysis kiosk systems for a "Fortune 50" consumer products company;

- data processing and system integration for a biotechnology firm;

(for more details, see portfolio at www.d-jackson.com)

Handled all management and business development activities, and the company website.

Fanning Software Consulting **Sep. 1998 - Dec. 1999**
Winnipeg, Manitoba and Calgary, Alberta
Software Consultant

Consulted with clients on small and large software projects developed in IDL. Projects included:

- developing an object-oriented data processing toolbox for use in nuclear fusion power research.

- 3-D visualization of ultrasound data for QA of mechanical parts, for a large government agency;

Other duties included assisting in editing what became the most widely-used book on IDL programming techniques.

National Research Council **Sep. 1992 - Aug. 1998**
Institute for Biodiagnostics
Winnipeg, Manitoba
Research Officer

Developed numerous applications in IDL and provided support for other IDL programmers and users. Applications required innovative GUI design and integration with other software packages, to provide image and spectrum analysis of data from magnetic resonance and near-infrared instruments. Other projects involved machine learning and genetic programming using the Common Lisp Object System.

Instructed and evaluated college students in the use of VoxelView, a 3-D medical image visualization and analysis program.

Supported users of Macintosh, PC, Unix and networking hardware and software, performed 3-D data visualization and analysis, managed WWW and intranet site, and produced in-house and promotional videos.

National Research Council **Sep. 1988 - Aug. 1992**
Canadian Institute for Industrial Technology
Winnipeg, Manitoba
Research Officer

Performed knowledge engineering, object-oriented design and GUI design work on projects with collaborators in cancer treatment and the aerospace and manufacturing industries.

Training & Personal Development

Summer Institute for Big Data **Aug. 2013**
Dept. of Computer Science, University of Victoria, Victoria, BC

Four-day seminar in machine learning and data access techniques, including hands-on work with SQL for Analytics, Hadoop and Hive.

IDL User Group Meeting **Feb. 2010**
Boulder, Colorado

Attended sessions on innovative uses of IDL in many scientific areas; presented talk on my work in analysis and visualization of physics and engineering data in nuclear fusion reactor design.

Education

University of Manitoba **1984-1988**
Winnipeg, Manitoba
Master of Science (Computer Science).

Program included graduate-level course work in artificial intelligence techniques, object-oriented programming and computer music.

University of Manitoba **1980-1984**
Winnipeg, Manitoba
Bachelor of Computer Science (Honours). GPA 3.79/4.00

Skills

Scientific Data Analysis and Visualization

I have worked on dozens of tasks involving bringing data to life, for the end user to understand the important point behind the numbers. This has included: signal processing of audio, radar, Lidar and EEG data; image processing of satellite, magnetic resonance (MR), photographic and telescope data; processing of 3-D spatial data from Lidar, nanomicroscopy, MR imaging, stereographic cameras and CAD systems; spectroscopy of MR and infrared data; working with NCDF and many other data formats. I am comfortable creating data presentations using static and interactive plots, imagery and 3-D displays. I have used many techniques of statistics and machine learning in analyzing data and data quality issues.

Effective Communication

I have collaborated well with scientists in a dozen different fields, working through understanding their technical requirements to clear, successful results.

Programming Languages

I am expert at using IDL to quickly get understandable results from data. Also GUI development, 3-D graphic techniques, integration with databases, Web and other external libraries and systems. I have used over a dozen programming languages over the years, now working on Python, and willing to learn more.

Problem Solving

Either on my own or with others, I greatly enjoy and am very capable in identifying the crux of a problem and finding its solution.

Quick Study

I pick up new techniques and technologies quickly when required to work in an unfamiliar field.

Human Languages

I speak, read and write French to a functional level, and have dabbled in a dozen other languages.

Volunteer Work

Music Director **Feb. 2009 - present**
Capital Unitarian Universalist Congregation, Victoria, BC

I lead our choir and congregation in singing and other musical efforts, at Sunday services as well as other special events.

Interests and activities

Music: singing, piano, ensemble leading

Canoeing, kayaking, cycling, tennis, racquetball, board games

References Available on Request