110 Edelmar Drive
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TREVOR B. KAPLAN

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O B J E C T I V E

To obtain a long-term position on Oahu that both utilizes my existing skills and allows for professional growth in a progressive, critical environment. I have diverse experience in applied physical sciences emphasizing software, database and web engineering, with excellent analytical, communication and management skills. The key to my career has been flexibility and a sincere interest in and aptitude for solving problems and learning new technologies. I am conversant in Spanish and Mandarin Chinese.

E D U C A T I O N

- ♦ **B.A. Mathematics**, **Economics, May 2000**
  Colgate University, *Hamilton New York*
  Magna Cum Laude, Dean's Award for Academic Excellence: 1997-2000, G.P.A. 3.6

P R O F E S S I O N A L   E X P E R I E N C E

Scientific Senior System Engineer   **August 2011 - Present**
NASA Goddard Spaceflight Center (GSFC), *Greenbelt, Maryland*
INNOVIM, LLC

- ♦ Operate, maintain, document ground processing software for NASA Joint Polar Satellite System (JPSS) Suomi-NPP satellite.
- ♦ Train and assist NASA scientists in using an interface driven data processor and an Oracle database in a developmental capacity to compile, test and debug scientific algorithm enhancements.
- ♦ Build software programs in Perl to manage files, augment databases, and provide customized tools for NASA analysts.
- ♦ Develop shell scripts (.sh, .bash, .tcsh) to track and record computer resources and system usage on an AIX platform.
- ♦ Support testing of modified algorithms written in C and Fortran; debug and resolve compiler errors and code output anomalies.
- ♦ Test and document satellite data processing software. Report bugs, build work-arounds, make recommendations to supervisors.
- ♦ Job requires consistent ability to work efficiently and flexibly under deadline pressure in an atmosphere of shifting priorities.

Programmer / Analyst   **May 2010 – August 2011**
NASA Goddard Spaceflight Center (GSFC), *Greenbelt, Maryland*
Science Systems & Applications Incorporated

- ♦ Wrote and managed software programs in IDL to derive global grids of tropospheric ozone from meteorological data and from the Microwave Limb Sounder (MLS) and Ozone Monitoring Instrument (OMI) on board the NASA AURA satellite.
- ♦ Designed, developed, maintained, and documented over 300 routines to analyze, model, visualize and report scientific data.
- ♦ Worked with small teams of NASA scientists to evaluate and enhance data processing methodologies and publish research.
- ♦ Assisted in testing signal processing algorithms in Fortran and IDL in support of the NDACC travelling standard lidar team.

Wind Energy Analyst   **August 2008 – May 2010**
Garrad Hassan America Inc., *Portland, Oregon*

- ♦ Assessed the wind resource and expected energy output of proposed and operational utility-scale wind farms in USA and China.
- ♦ Wrote large, technical wind assessment reports as an independent consultant and clarified data and results to clients and banks.
- ♦ Designed, implemented and managed databases in Microsoft SQL Server that are accessed by over 30 analysts in 4 US offices.
- ♦ Wrote and developed software in Matlab and Excel-VBA to read, evaluate, plot and format numerous meteorological data sets.
- ♦ Inspected hardware and analyzed data from anemometers, wind vanes, and remote sensing devices such as SODAR and LIDAR.
- ♦ Inspected wind farms, developed digital maps, used computational software to model wind flow and optimize turbine layouts.

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Programmer / Research Associate   October 2002-August 2008
NOAA Mauna Loa Observatory (MLO), Hilo, Hawaii
Research Corporation at University of Hawaii, Joint Institute for Marine and Atmospheric Research

Software Engineering:
♦ Wrote, maintained and documented over 100,000 lines of code in IDL, Object Pascal, and Visual C++. Built custom GUIs to visualize and analyze scientific data, images, and digital signals. Managed software programs at all phases of their life cycles.
♦ Supported emerging camera lidar and polar nephelometer technology by building data analysis software and adapting code and documentation to changes in instrumentation and analysis methodology for over 5 years.
♦ Built software to validate space-based observations from NASA satellites using data from MLO, then published research.

Hardware Engineering:
♦ Built GUI-driven programs in Delphi Object Pascal and Visual C++ to operate charge couple device (CCD) cameras, lasers, pulse generators, multi-channel data acquisition boards and housekeeping electronics via USB, serial and communication ports.
♦ Built GUI to operate and control a full lidar system. Deployed system at NOAA American Samoa observatory in 2005. Program is presently used to configure hardware, acquire and visualize data, and analyze products from 4 NOAA lidar observatories.

Project Management and Support:
♦ Managed 6 atmospheric research programs at MLO measuring ozone, carbon dioxide, aerosols, and solar radiation.
♦ Installed, calibrated, operated, and repaired instruments and workstations and assembled over 100 technical training manuals.
♦ Communicated with clients and organizations worldwide to deliver data, troubleshoot instruments and ensure data quality.

Web & Database Development:
♦ Co-administered MLO website republication using Dreamweaver MX, HTML, and CSS (http://www.mlo.noaa.gov).
♦ Created NOAA lidar website for Global Monitoring Division (http://www.mlo.noaa.gov/programs/gmdlidar/general_info.html)
♦ Created, installed and managed web databases and online forms using Apache, PHP and MySQL (for Windows).
♦ Wrote detailed webpages for over 80 cooperative research programs involving institutions from all around the world.

Algorithmic Programming:
♦ Wrote code involving non-linear curve-fitting routines, cubic spline interpolation, noise reduction, data smoothing, contour and multi-dimensional plots, image visualization, statistical uncertainty, regression and numerical modeling.

System Engineer   May 2000 – Sept. 2001
NASA Goddard Spaceflight Center (GSFC), Greenbelt, Maryland
Honeywell Technical Services Incorporated

♦ Flight Operator at mission control center for NASA Earth Observing-1 (EO-1) research satellite at GSFC.
♦ Commanded and monitored EO-1 to ensure proper data acquisition, transmission of hyper-spectral and multi-spectral land images, and planning and execution of solid state recorder memory dumps and data downlinks.
♦ Communicated with ground station personnel worldwide to coordinate flight overpasses and establish satellite telemetry.
♦ Analyzed live telemetry, identified trends and abnormalities, checked command/control sequences on UNIX/LINUX platforms.

SKILLS AND PROFICIENCIES

♦ IDL, Matlab, Borland Delphi, Object Pascal, Visual Basic for Applications (VBA), Perl, Macromedia Dreamweaver, HTML, CSS, Apache, PHP, Oracle, MySQL, SQL Server, Relational Databases, CCDOps, CCDSoft, Microsoft Visual C++, MS Office: Excel, PowerPoint, Word, WAsP, Windfarmer, XMap, Global Mapper, GPS, Linux, Lyx, Latek, Fortran 77
♦ Conversant in Spanish and Mandarin Chinese.

AWARDS AND ACTIVITIES

♦ NASA Group Achievement Awards: (1) JPSS Transition Team, 2012, (2) Suomi NPP Mission Development Team (2013)
♦ NASA Outstanding Contribution Certificate, NPP SDS, 2011
♦ RCUH State Employee of the Year Nominee, 2006
♦ Professional Tennis Instructor, Hilo Hawaii, 2001-2007
♦ FM, and Internet Disc Jockey, Colgate University and University of Hawaii-Hilo, 1996-2005
♦ 4-Time MVP, 3-Time State Champion, South Burlington High School Tennis 1993-1996.

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PUBLICATIONS AND CONFERENCES

- *Variability of extratropical ozone stratosphere-troposphere exchange using Microwave Limb Sounder observations*, Mark A. Olsen, Anne R. Douglass, Trevor. B. Kaplan, Journal of Geophysical Research, Submitted July 2012

- *Coastal Aerosol Profiling with a Camera Lidar and Nephelometer*, N.C.Parikh Sharma, John.E.Barnes, Trevor.B.Kaplan, Antony.D.Clarke, Journal Of Atmospheric And Oceanic Technology, Volume 28, 16 August 2010

- China Wind Power 2009, Beijing China, October 2009

- *Coastal Aerosol Profiling with a Camera Lidar and Nephelometer*, N. C. Parikh Sharma, John E. Barnes, Trevor B. Kaplan and Anthony D. Clarke, International Symposium on Advanced Environmental Monitoring, February 2008, Honolulu, Hawaii

- *Comparison of MLS Ozone and Ozonesonde Profiles over Hilo, Hawaii*, Julie Elbert, Trevor Kaplan and John E. Barnes, NASA Aura Science Meeting, October 2007, Pasadena, California

- *Anions, Cations, and Carbonaceous Aerosols at MLO*, B. J. Huebert, S. G Howell, J.L. Zhuang, and T. Kaplan, NOAA ESRL Global Monitoring Annual Conference, Boulder, CO, May 2-3, 2007

- *NASA/AURA/Microwave Limb Sounder Water Vapor Validation by MLO Raman Lidar*, J.E. Barnes, T. Kaplan, and H. Voemel, ESRL Global Monitoring Annual Conference, Boulder, CO, May 2-3, 2007, Journal of Geophysical Research April 2008

- *NASA/AURA/Microwave Limb Sounder Water Vapor Validation at Mauna Loa Observatory by Raman Lidar*, John. E. Barnes, Trevor Kaplan, Holgor Vomel, and William G. Read, NOAA/ESRL/Global Monitoring Division/Mauna Loa Observatory, (*Journal of Geophysical Research, April 2007, for special issue*)

- *Boundary layer aerosol measurements with a bistatic CCD camera lidar*, J.E.Barnes, N.C.Parikh, T.B.Kaplan, ILRC, Matiera, Italy, July 2006

- *An Imaging Bistatic Lidar System for Boundary Layer Monitoring*, N. C. Parikh Sharma, J. E. Barnes and T. Kaplan, IGARSS, Denver, CO, July 2006

- *Boundary layer aerosol measurements with a bistatic CCD camera lidar*, J. E. Barnes, N. C. Parikh and T. B. Kaplan, Western Pacific Geophysics Meeting, Honolulu, HI, August 2004

- *Bistatic lidar measurements in the boundary layer using a CCD camera*, John E. Barnes, N. C. Parikh, Trevor Kaplan, SPIE USE, V. 1 5154-4, Honolulu HI, 7 July 2003

references available upon request