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Assistant Professor of Geomatics Engineering
Department of Civil and Geomatics Engineering
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EDUCATION

- Ph.D. Geomatic Engineering** (2002). The University of New South Wales, Australia
M.E. Geomatic Engineering (1999, upgraded to PhD). UNSW, Australia
B.Sc. Surveying/Geomatics (1997). The University of Nairobi, Kenya

EXPERIENCE

Assistant Professor (August 2007 – Present)

Department of Civil & Geomatics Engineering, California State University, Fresno

Postdoctoral Research Scientist (February 2003 – July 2007)

Geospatial & Earth Monitoring Division, Geoscience Australia, Australia

Graduate Research/Teaching Assistant (March 1999 – December 2002)

School of Geomatic Engineering, University of New South Wales, Australia

Graduate Engineer (September 1997 – January 1999)

Aerophoto Systems Engineering Company, Nairobi, Kenya

PROFESSIONAL LICENSURE, REGISTRATION & OTHER TRAINING

U.S. LSIT #7901, State of California

UNIVERSITY TEACHING

Graduate Courses:

- Independent Study (Supervision)
- Thesis (Supervision)

Undergraduate Courses:

- Project Design
- Computer-Aided Mapping
- Geopositioning
- Satellite Geodesy
- Optics and Waves
- Geodetic Survey
- Engineering Surveying
- Engineering Math
- Advanced Adjustment Computations
- Internship (Supervision)
- Senior Project (Supervision)

RESEARCH GRANT PROPOSALS

- Institutional Co-PI, "SAR Data for Western North America Crustal Dynamics Research: WINSAR Consortium", UNAVCO GeoEarthscope Mini Cat 1 Submission, 2008.
- PI, "REU Site: GPS/GIS Laboratory Exercises for Undergraduate Research and Summer Internship", NSF, 2008. (\$314, 935).
- Co-PI, "Automated Intelligent Building Monitoring with Multi-Sensor GPS, Accelerometer, and FBG Systems", UNSW Faculty Research Grant, 2003-2004. (\$50,000).
- PI, "Automated Intelligent Building Monitoring with Multi-Sensor-GPS Systems", ARC-Discovery (Postdoc Fellowship) grant application, 2002. (\$830,482).

PUBLICATIONS

Journal Publications

- Ogaja, C. "A geodetic perspective of large-scale concentrated solar power technology in the presence of crustal deformation—flat mirrors in the desert," *Journal of Applied Geodesy*, (under review).
- Bhaskaran S., Kumar L., Dehaan R. & C. Ogaja. "Processing and analysis of hyperspectral data for extracting specific urban features," Submitted to *International Journal of Remote Sensing*.
- Dammalage T.L., Satirapod C., Kibe S. & C. Ogaja. "Wavelet transform application to C/A code multipath mitigation at GPS reference stations for improved differential GPS corrections," Accepted for publication in the *Survey Review* journal.
- Zhao S-H., X-S. Lu, Q-F. Wang, G-R. Hu & C. Ogaja. "Analysis and evaluation of various tropospheric modelling approaches for high-precision GPS kinematic positioning over medium ranges and at high altitude: A case study," *Journal of Surveying Engineering*, Vol. 135, No.2, May 1, 2009.
- Ogaja, C., Li, X., Rizos, C. "Advances in structural monitoring with Global Positioning System Technology: 1997-2006," *Journal of Applied Geodesy*, 1(3), 171-179, 2007.
- Ogaja, C., & C. Satirapod, "Analysis of high-frequency multipath in 1-Hz GPS kinematic solutions," *GPS Solutions*-Springer Verlag, Volume 11, Number 4, 269-280, DOI 10.1007/s10291-007-0058-8, 2007.
- Ogaja, C., & J. Hedfors, "TEQC multipath metrics in MATLAB," *GPS Solutions*, Volume 11, Number 3, 215-222, DOI 10.1007/s10291-006-0052-6, 2007.
- Ogaja, C., "Neural network relation of GPS results with continental hydrology," *Artificial Satellites - Journal of Planetary Geodesy* (ISSN 0208-841X), Vol. 41, No. 1, p. 23 - 32, 2006.
- Ogaja, C., "Site-specific correlation of GPS height residuals with soil moisture variability using artificial neural networks," *Earth Planets Space*, 58,(2), p. e5-e8, 2006.
- Ogaja, C., "Multisource data analysis for geoscience applications," *Computers & Geosciences*, Vol. 30, No. 5, 493-499, doi:10.1016/j.cageo.2004.02.002, 2004.
- Ogaja, C., Wang, J. & C. Rizos, "Detection of wind-induced response by wavelet transformed GPS solutions," *Journal of Surveying Engineering*, Vol. 129, No. 3, 99-104, 2003.
- Ogaja, C., Wang, J., Rizos, C. & J. Brownjohn, "Multivariate monitoring with GPS observations and auxiliary multisensor data," *GPS Solutions*, 5(4), 58-69, 2002.
- Satirapod, C., Ogaja, C., & C. Rizos, "An approach to GPS analysis incorporating wavelet decomposition," *Artificial Satellites - Journal of Planetary Geodesy*, Vol. 36, No. 2, ISSN 0208-841X, 27-35, 2001.

Books and Book Chapter Contributions

- Ogaja, C., "Applied GPS for Engineers and Project Managers" ISBN not yet available. Book proposal successfully reviewed by the ASCE Press (under consideration).
- Ogaja, C., "Surveying and Geomatics Engineering Design," ISBN: 978-1-4398-1743-8. To be published by CRC Press of Taylor & Francis Group (under preparation).
- Titov, O., Govind, R., & C. Ogaja, "Geoscience Australia IVS Analysis Centre" In: *International VLBI Service for Geodesy and Astrometry Annual Report*, N. R. Vandenberg & K. D. Baver (eds.), NASA/TP-2004-212254, 163-165, 2004.

Ogaja, C., Wang, J., & C. Rizos, "Principal Component Analysis of wavelet transformed GPS data for deformation monitoring" In: *Vistas for Geodesy in the New Millennium*, J. Adams & K.P. Schwarz (eds.), IAG Symp. Vol.125, Springer-Verlag, ISBN 3-540-43454-2, 341-346, 2002.

Technical Reports and Articles

- Ogaja C., "Is GPS to blame for recent air crashes?" *Standard Newspaper*, Published Online June 17, 2008
- Titov, O., Govind, R., C. Ogaja, "Geoscience Australia Analysis Center", *NASA Scientific and Technical Aerospace Reports (STAR)*, Vol. 42, Issue 21, pp 45, 2004.
- Ogaja, C., "A Framework in Support of Structural Monitoring by Real Time Kinematic GPS and Multisensor Data", *UNISURV Report S-71*, University of New South Wales, ISBN 0-7334-1958-5, 191 + xiii pp., 2002.

Peer-Reviewed Proceedings

- Ogaja, C., "Software implementation of multisensor data reduction and integrity assessment of GPS data for structural monitoring applications," In Proc. *2nd Symp. on Geodesy for Geotechnical & Structural Engineering*, 21-24 May, Berlin, Germany, 27-37, 2002.
- Ogaja, C., "On-line GPS integrity monitoring and deformation analysis for structural monitoring applications," In Proc. *14th Int. Tech. Meeting of the Satellite Division of the U.S. Inst. of Navigation*, 11-14 September, Salt Lake City, Utah, USA, 989-999, 2001.
- Ogaja, C., Rizos, C., Wang, J., & J. Brownjohn, "High precision dynamic GPS system for on-line structural monitoring," *5th Int. Symp. on Satellite Navigation Technology & Applications*, Canberra, Australia, 24-27 July, paper 35, CD-ROM proc., 2001.
- Ogaja, C., Rizos, C., Wang, J., & J. Brownjohn, "A dynamic GPS system for on-line structural monitoring," *Int. Symp. on Kinematic Systems in Geodesy, Geomatics & Navigation*, 5-8 June, Banff, Canada, 290-297, 2001.
- Ogaja, C., Rizos, C., Wang, J., & J. Brownjohn, "Towards the implementation of on-line structural monitoring using RTK-GPS and analysis of results using the wavelet transform," *10th FIG Int. Symp. on Deformation Measurements*, 19-22 March, Orange, California, USA. 284-293, 2001.
- Ogaja, C., Rizos, C., & S. Han, "Is GPS good enough for monitoring the dynamics of high rise buildings?" *2nd Trans Tasman Survey Congress*, Queenstown, New Zealand, 20-26 August, 150-164, 2000.

PRESENTATIONS

Invited Presentations

- Ogaja, C., "High-rate GPS/Geodesy: Implications for science and research," *CSUF Seminar*, California State University, Fresno, California, USA, 5 March, 2007.
- Ogaja, C., "Trends in GPS technology and applications: A geomatics perspective," *UCT Seminar*, School of Architecture, Planning & Geomatics, University of Cape Town, South Africa, 13 February, 2007.
- Ogaja, C., "Role of GPS in spatial sciences," *USQ Seminar*, Faculty of Engineering and Surveying, University of Southern Queensland, Australia, 15 February, 2006.
- Ogaja, C., "Evaluation of hydrology signals with GPS measurements," *32nd Annual Research Seminars (ARS)*, School of Surveying & Spatial Information Systems (SIS), UNSW, Sydney, Australia, 7-8 November, 2005.
- Ogaja, C., "A simplified fault detection algorithm and its application to integrity assessment of GPS data for real-time applications," *29th Annual Research Seminars*, School of Surveying & SIS, UNSW, Sydney, Australia, 6-7 November, 2001.
- Ogaja, C., "Wavelets extract high and low frequencies: A powerful tool for GPS data analysis," *28th Annual Research Seminars*, School of Surveying & SIS, UNSW, Sydney, Australia, 20-21 November, 2000.

Conference Presentations

- Ogaja, C., "LSIT Review (GPS/Geodesy)," *48th Annual Geomatics Engineering Conference*, Clovis, California, USA, 22-24 January, 2009.

- Ogaja, C., "Space Geodesy, Surveyor's Standpoint," *47th Annual Geomatics Engineering Conference*, Clovis, California, USA, 24-26 January, 2008.
- Ogaja, C., "Software implementation of multisensor data reduction and integrity assessment of GPS data for structural monitoring applications," Presented at the *2nd Symposium on Geodesy for Geotechnical & Structural Engineering*, 21-24 May, Berlin, Germany, 27-37, 2002.
- Ogaja, C., "On-line GPS integrity monitoring and deformation analysis for structural monitoring applications," Presented at the *14th Int. Tech. Meeting of the Satellite Division of the U.S. Inst. of Navigation*, 11-14 September, Salt Lake City, Utah, USA, 2001.
- Ogaja, C., Rizos, C., Wang, J., & J. Brownjohn, "High precision dynamic GPS system for on-line structural monitoring," Presented at the *5th Int. Symp. on Satellite Navigation Technology & Applications*, Canberra, Australia, 24-27 July, 2001.
- Ogaja, C., Rizos, C., Wang, J., & J. Brownjohn, "A dynamic GPS system for on-line structural monitoring," Presented at the *Int. Symp. on Kinematic Systems in Geodesy, Geomatics & Navigation*, 5-8 June, Banff, Canada, 2001.
- Ogaja, C., Rizos, C., Wang, J., & J. Brownjohn, "Towards the implementation of on-line structural monitoring using RTK-GPS and analysis of results using the wavelet transform," Presented at the *10th FIG Int. Symp. on Deformation Measurements*, 19-22 March, Orange, California, USA., 2001.
- Ogaja, C., Rizos, C., & S. Han, "Is GPS good enough for monitoring the dynamics of high rise buildings?" Presented at the *2nd Trans Tasman Survey Congress*, Queenstown, New Zealand, 20-26 August, 2000.

PROFESSIONAL SOCIETIES AND SERVICE

Memberships

- Member, American Congress on Surveying and Mapping (ACSM), 2007-Present
- Affiliate Member, American Society of Civil Engineers (ASCE), 2007-Present
- Member, American Association for Geodetic Surveying (AAGS), 2007-Present
- Member, American Geophysical Union (AGU), 2007-Present
- Member, International Global Navigation Satellite Systems (IGNSS) Society, 2005-Present
- Member, International Earth Rotation Service (IERS) Hydrology Bureau, 2004-Present
- Associate Member, International VLBI Service (IVS), 2003-Present
- Associate Member, US Institute of Navigation (ION), 2001-Present

Research Grant Reviews

- Invited External Grant Reviewer for the NSERC Grants Program, Canada, 2009.

Book Reviews

- GPS-GALILEO Environmental Monitoring (ISBN: 978-3-540-88255-8) by Joseph L. Awange, Springer, 2009, approx. 500 pp.

Journal Reviews

- Computers and Geosciences
- Journal of Computational and Applied Mathematics
- Journal of Surveying Engineering
- Artificial Satellites - Planetary Geodesy
- Journal of Geophysical Research-Solid Earth
- Terrestrial, Atmospheric and Oceanic Sciences

Other Professional Service

- Fresno State Institutional Representative, Western North America Interferometric Synthetic Aperture Radar Consortium (WInSAR), 2007-Present
- Fresno State Rep., California Spatial Reference Center (CSRC) Coordinating Council, 2007/08

- Member, Conference Organizing Committee, IAG/IAPSO/IABO Joint Assembly, Dynamic Planet Conference in Cairns, Australia, August 22-26, 2005
- Member, Cooperative Research Centre for Spatial Information (CRCSI), Australia, 2003-2006

UNIVERSITY SERVICE AND COMMITTEES

- Secretary, Lyles College of Engineering Consultative Body, CSU Fresno, 2009-2010
- Member, Committee for Faculty Equity and Diversity, CSU Fresno, 2009-2011
- Member, Writing Competency Subcommittee of the Academic Senate, CSU Fresno, 2009-2010
- Chair, Department Adhoc Publications Committee, Department of Civil and Geomatics Engineering, CSU Fresno, 2009-2010
- Chair, Department Publications Nomination for the twelfth annual faculty publications honor by the Henry Madden Library, CSU Fresno, Spring 2009
- Member, Engineering Math Education Committee, College of Engineering, CSU Fresno, 2009
- Member, Adhoc Key/Security Committee, College of Engineering, CSU Fresno, 2009-2010
- Faculty Advisor for the Student Chapter of the American Congress on Surveying and Mapping (ACSM), Fall 2008-Present
- Member, Masters Thesis Committee, MSCE program, CSU Fresno, Spring 2009
- Member, Masters Thesis Committee, MSCE program, CSU Fresno, Spring 2008
- Faculty Member, Geomatics Engineering Program Advisory Council, CSU Fresno, 2007-Present
- Faculty Member, College of Engineering Consultative Body, CSU Fresno, 2007-Present
- Member, Geomatics Engineering CLSA Scholarships Review Committee, January 2008
- Member, Geomatics Engineering Strategic Plan Committee, Spring 2008

THESES, PROJECT ADVISING, AND SUPERVISION

Theses and Dissertation Students

- Chia-Chia Wang, "An Accuracy Assessment for Geographic Information Systems Applications", Thesis, June 2008 (Thesis Committee Member, Spring 2008)
- Orrin Thomas (Thesis Committee Member, Spring 2009)

Non-Thesis M.S. Students

- Freddy C. Caiza B., Independent Study (Supervision), Spring 2008

Project Advising and Supervision

- Joaquin Javier Depaz, Senior Project (Supervision), Spring 2009
- Christopher Scott Martin, Senior Project (Supervision), Spring 2009

Internship Supervision

- Hoggatt Adonis, Spring 2009
- Joaquin Javier Depaz, Fall 2008
- Paul Louis Fridley, Fall 2008

AWARDS AND SCHOLARSHIPS

- **International Postgraduate Research Scholarship (IPRS), 1999-2002**
The University of New South Wales (UNSW), Sydney, Australia
- **Supplementary Engineering Postgraduate Award (SEPA), 1999-2002**
The University of New South Wales (UNSW), Sydney, Australia
- **Best Student Paper, ION-GPS Conference, September 2001,**

14th International Technical Meeting of the Satellite Division of the U.S. Institute of Navigation, Salt Lake City, Utah, 11-14 September, 2001

- **Best Session Presentation, ION-GPS Conference, September 2001,**
14th International Technical Meeting of the Satellite Division of the U.S. Institute of Navigation, Salt Lake City, Utah, 11-14 September, 2001
- **Best Student Paper, IAG Symposium, May 2002,**
2nd Symposium on Geodesy for Geotechnical & Structural Engineering, an IAG (International Association of Geodesy) symposium, Berlin, Germany, 21-24 May, 2002
- **The Institute of Surveyors of Kenya (ISK) Prize, 1997,**
The Best Student, Department of Surveying, Faculty of Engineering
- **The Survey Consult Prize, 1997,**
The Best Student, Department of Surveying, Faculty of Engineering