
SAMSUNG LIM, PH.D.

BIOGRAPHY

Dr Samsung Lim has been teaching Surveying and GIS at the School of Surveying and Spatial Information Systems, UNSW, since July 2004. His research interests are in Geographic Information Science, Geo-spatial Information Technology, 3D Modelling, Geodetic GPS Network Analysis and Wireless Internet-Based Real-Time Kinematic GPS. Samsung has been appointed as a co-principal investigator of the algorithms and software division of Satellite Navigation and Positioning Laboratory (SNAP), the world-class premier GPS Research Group in Australia. Samsung has developed an address-based search tool in 2005 in conjunction with web-map services such as Google Earth, Google Maps, Virtual Earth, ESRI Arc-Web, and Yahoo Maps, which stimulated Google and Microsoft to make Australian context available in 2006. His 3D model of UNSW Kensington campus in 2006 is unique in that all buildings are textured and therefore the virtual reality is obvious.

Samsung has been an Associate Professor of the Department of Geomatics Engineering at Inha University, S. Korea, where he lectured on GPS theory and practical applications, GIS programming and project management, Satellite Geodesy, Satellite Dynamics, Numerical Analysis and Engineering Mathematics since March 1997. He was appointed Vice Director of Computation & Information Center at Inha University from 2002 until 2004.

Samsung obtained a Doctor of Philosophy in Aerospace Engineering and Engineering Mechanics from the University of Texas at Austin, USA, in 1995. He had worked for three and a half years at Center for Space Research, the University of Texas at Austin, primarily on the Geoscience Laser Altimeter System (GLAS). GLAS of the Earth Observing System was to make ice sheet elevation measurements over Antarctica and Greenland to accomplish the mission objectives related to the Earth's Global Climate Changes.

Samsung graduated in Mathematics from Seoul National University, S. Korea, obtaining a Bachelor of Arts in 1988, and a Master of Arts in 1990 in Dynamical Systems. He was a Ph.D. candidate in Mathematics, the University of Texas at Austin from 1990 until 1992.

EDUCATION

Sep. 1992 – Dec. 1995	The University of Texas	Austin, TX
Ph.D., Department of Aerospace Engineering and Engineering Mechanics		
▪ Dissertation: <i>Orbit Analysis and Maneuver Design for the Geoscience Laser Altimeter System</i>		
▪ Research Area: Orbit Analysis, Maneuver Design, Laser Altimeter System, GPS Data Processing, Precise Orbit Determination		

Sep. 1990 – Aug. 1992	The University of Texas	Austin, TX
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Ph.D. Candidate, Department of Mathematics

- Research Area: Dynamical Systems, Chaos Theory

Mar. 1988 – Feb. 1990 **Seoul National University** **Seoul, S. Korea**

M.A., Department of Mathematics

- Thesis: *On Curve Shortening Problem*
- Research Area: Differential Geometry, Dynamical System

Mar. 1984 – Feb. 1988 **Seoul National University** **Seoul, S. Korea**

B.A., Department of Mathematics

**PROFESSIONAL
EXPERIENCE**

July 2004 – Present **UNSW** **Sydney, Australia**

Senior Lecturer & Director of Undergraduate Studies, School of Surveying and Spatial Information Systems

- Teaching Area: GIS, Computing Applications in Geomatics, Geospatial Information Techniques and Applications, Visualization of Spatial Data
- Research Area: Tropospheric Modelling, RTK DGPS System with the Wireless Internet, Location Based Services, LiDAR Data Processing

April 2002 – Jan. 2004 **Inha University** **Incheon, S. Korea**

Vice Director, Computation & Information Center

- The Computation & Information Center (CIC) of Inha University provides state-of-the-art computing facilities and system links for the education and research on campus. The center also maintains various software programs and provides counseling services. Students can take advantage of the excellent up-to-date facilities in computer rooms that are open 24-hours a day, and have opportunities to participate in computer training courses regularly.

Mar. 2004 – July 2004 **Inha University** **Incheon, S. Korea**

Associate Professor, Department of Geomatics Engineering

- Teaching Area: GPS Theory and Practice, Satellite Geodesy, Classical Geodesy, GPS Signal Processing, GIS Programming, GIS Projects, Numerical Analysis
- Research Area: Maintenance and Management System for the National Geodetic Control Point Network, RTK DGPS System with the Wireless Internet Protocol, Development of Real-Time Geometric Correction Systems for Satellite Imagery, Development of GPS Van by utilizing GPS and Dead Reckoning Sensors, Controller Design for Attitude and Orbit Precision Control, Open GIS Component for Transformations and Projections of Spatial Reference Systems

Mar. 1999 – Feb. 2004 **Inha University** **Incheon, S. Korea**

Assistant Professor, Department of Geomatics Engineering

Mar. 1997 – Feb. 1999 **Inha University** **Incheon, S. Korea**

Full Time Instructor, Department of Geomatics Engineering

Jan. 1996 – Feb. 1997 **Renault-Samsung Motors** **Seoul, S. Korea**

Senior Researcher, Technical R&D Division

- Research Area: GPS Application for Land Vehicle Navigation, Intelligent Transportation Systems, Voice Recognition Systems, Development of Glass Antenna



Sep. 1992 – Dec. 1995 **The University of Texas** **Austin, TX**

Research Assistant, Center for Space Research

- Research Area: Orbit Analysis, Maneuver Design, Laser Altimeter System, GPS Data Processing, Precise Orbit Determination

Jan. 1992 – Aug. 1992 **The University of Texas** **Austin, TX**

Research Assistant, Department of Mathematics

- Research Area: Dynamical System Visualization, Lorenz Attractor

Sep. 1990 – Dec. 1991 **The University of Texas** **Austin, TX**

Teaching Assistant, Department of Mathematics

- Teaching Area: Calculus, Real Analysis

Aug. 1988 – Feb. 1990 **Seoul National University** **Seoul, Korea**

Teaching Assistant, Department of Mathematics

- Teaching Area: Calculus

**PROFESSIONAL
COMPUTER
EXPERIENCE**

SYSTEM

CRAY, VAX/VMS, UNIX, LINUX, WinCE, Windows, McIntosh

LANGUAGE

C (Visual), C++ (Visual), Fortran, Basic (Visual), Perl, Java, Awk, SHELL (sh, bash, csh, tcsh), XML, WML

SCIENTIFIC SOFTWARE

IDL, PCI, ESRI Products, Trimble Office, GPSurvey, Bernese, Gamit, MatLab, Mathematica

PROGRAMMING AREA

GPS, Satellite Geodesy, GIS, Numerical Analysis, Visual Windows Programming, WinCE Embedded Programming for PDA, Wireless Internet, TCP/IP

**SPONSORED
RESEARCH
ACTIVITIES**

CI, Lim, S., Paik, H.Y., Larkin, H., and Jo, G.S., *Context-Aware Computing for Personalised Location-Based Services*, UNSW, Engineering-ADFA Research Collaboration Scheme, July 2008 – June 2009.

CI, Zhang, K., Wu, F., Rizos, C., Lim, S., Le Marshall, J., Rea, A., Kuleshov, Y., *Satellite-Based Radio Occultation for Atmospheric Sounding, Weather Forecasting and Climate Monitoring in the Australian Region*, ARC, ARC-Linkage, July 2008 – June 2011.

CI, Collier, P. and Lim, S., *Quality Control Issues for Real-Time Positioning*, CRC-SI, Project 1.2, July 2008 – June 2010.

PI, Musa, T., Rizos, C. and Lim, S. *Development of WPI-net GPS Services for Precise Real-Time Positioning, Mapping & Navigation*, Malaysia Government Project, January 2008 – December 2009.

CI, Higgins, M., Feng, Y., Rizos, C. and Lim, S., Lorimer, R., *Delivering Precise Positioning Services in Regional Areas*, CRC-SI, Project 1.04, July 2007 – June 2010.

CI, Lim, S., *Metadata Research on Spatial Data*, Omnilink Ltd. Pty, March



2005 – August 2008.

CI, Ross, S.A. and Lim, S., Stefanovich, M. and Kulov, I., *The Material Culture and Natural Environment of the Struma River Valley in from Prehistory through the Middle Ages*, UNSW, FRG, January 2006 – June 2007.

CI, Lim, S., *Development of a Mobile Data Collection System for Spatial Information*, UNSW, FRG, January 2005 – December 2005.

CI, Lim, S., *Development of PCS-Based Indoor Positioning System*, Sponsored by the Ministry of Information & Communication (\$37,500), Aug. 2003 – July 2004

CI, Lim, S., *Development of Real-Time Geometric Correction Systems for Satellite Imagery by Using Wireless Internet-Based RTK DGPS*, Sponsored by the Regional Research Center for Transportation System of the Yellow Sea (\$52,500), Mar. 2003 – Feb. 2004

CI, Lim, S., *Development of DGPS and PDA Interface for GIS Applications*, Sponsored by the Ministry of Information & Communication (\$37,500), Aug. 2002 – July 2003

CI, Lim, S., *Development of Beacon DGPS Monitoring System*, Sponsored by the Ministry of Maritime Affairs & Fisheries (\$45,000), Mar. 2002 – Feb. 2003

CI, Lim, S., *Development of Techniques for Improved Coordinate Accuracy of Inaccessible Area Imagery*, Sponsored by Korean Institute of Geoscience & Mineral Resources (\$45,000), Sept. 2001 – Aug. 2002

CI, Lim, S., *GIS Coverage Mapping of Golf Courses*, Sponsored by GeoCity Inc. (\$37,500), Dec. 2001 – Mar. 2002

CI, Lim, S., *Development of Strongly Coupled GPS+DR System for GIS Applications*, Sponsored by the Ministry of Information & Communication (\$37,500), Aug. 2001 – July 2002

CI, Lim, S., *Development of Maintenance and Management System for the Network of National Geodetic Control Points*, Sponsored by Korean Institute of Construction Technology (\$60,000), Sept. 2000 – April 2001

CI, Lim, S., *Development of DGPS Interface Module for GIS Applications*, Sponsored by the Ministry of Information & Communication (\$37,500), Aug. 2000 – July 2001

CI, Kim, B.K. and Lim, S., *Development of Line Feature Surveyor by GPS Van*, Sponsored by SDK InfoTech Inc. (\$75,000), July 2000 – Dec. 2000

CI, Lim, S., *Development of GPS Van by utilizing GPS and Dead Reckoning Sensors*, Sponsored by Mobile Mapper Inc. (\$37,500), June 2000 – Dec. 2000

CI, Lim, S., *Development of Controller Design for Attitude and Orbit Precision Control*, Sponsored by the Ministry of Science & Technology (\$37,500), April 2000 – March 2001

CI, Lim, S., *Development of Wrapper Component for Spatial Reference Systems*, Sponsored by the Electronics & Telecommunications Research Institute (\$15,000),



March 2000 – June 2000

CI, Lee, K.S. and Lim, S., *Development of Land Information System using Korea Multi-purpose Satellite Imagery*, Sponsored by Korean Institute of Geoscience & Mineral Resources (\$112,500), Sept. 1999 – Aug. 2001

CI, Lim, S., *Development of GPS Interface Module for GIS Applications*, Sponsored by the Ministry of Information & Communication (\$30,000), Aug. 1999 – July 2000

CI, Lim, S., *Development of Open GIS Component for Transformations and Projections of Spatial Reference Systems*, Sponsored by the Electronics & Telecommunications Research Institute (\$37,500), April 1999 – Dec. 1999

CI, Lee, K.S. and Lim, S., *Study of Natural Disasters by Using Satellite Imagery*, Sponsored by the Ministry of Government Administration & Home Affairs (\$127,500), Dec. 1998 – Nov. 1999

CI, Kim, B.K. and Lim, S., *Differential GPS Survey of Coastal Borders*, Sponsored by the Ministry of Maritime Affairs & Fisheries (\$150,000), July 1998 – June 2000

CI, Lim, S., *Construction of GIS Coverage Map by utilizing Kinematic GPS*, Sponsored by Korean Institute of Construction Technology (\$37,500), June 1998 – Dec. 1998

CI, Kim, K.H. and Lim, S., *Development of Geographic Information Management and Supply System*, Sponsored by the National Geography Institute (\$75,000), Nov. 1997 – Dec 1998

COMPUTER SOFTWARE DEVELOPMENT

Hahn, J.H., Park, J.M. and Lim, S., *PDA Based Satellite Imagery Visualization Module*, Ver. 1.3, WindowsCE, Sponsored by the Ministry of Maritime Affairs & Fisheries, 2002

Kim, J.H. and Lim, S., *WinCE Embedded Component for RTCM Message Transfer*, Ver. 1.2, WindowsCE, Sponsored by the Ministry of Maritime Affairs & Fisheries, 2002

Cho, S.J. and Lim, S., *GPS+Gyro+Odometer Fusion System*, Ver. 1.5, Windows 95/98/Me/2000, Sponsored by Mobile Mapper Inc., 2001

Lee, D.H. and Lim, S., *Spatial Reference Systems Component for Transformations and Projections*, Ver. 2.0, Windows 95/98/Me/2000, Sponsored by the Electronics & Telecommunications Research Institute, 2000

Lee, D.H. and Lim, S., *GPS Processor Component for Geographic Information Systems*, Ver. 1.5, Windows 95/98/Me/2000, Sponsored by the Ministry of Information & Communication, 1999

PATENTS

Patent No. 1003725090000, Lim, S. and Seo, J.H., *Hybrid Navigation System*, February 2003

Patent No. 1001942810000, Lim, S., *Map Matching in Navigation System*, February 1999



HONORS

April 14, 2001 **Inha University** **Inchon, S. Korea**
Excellent Paper Awards, The Korean Society of Surveying, Geodesy, Photogrammetry & Cartography

Jan.1992 – May.1992 **The University of Texas** **Austin, Texas, USA**
Fellowship, National Science Foundation

Aug.1986 – Jul.1988 **Seoul National University** **Seoul, S. Korea**
University Fellowship

PROFESSIONAL MEMBERSHIPS

Professional Member, WG 4.3.3. NWP for positioning, IAG

Professional Member, Spatial Sciences Institute, Australia

Professional Member, American Geophysics Union, USA

Professional Member, The Institute of Navigation, USA

Professional Member, The Australian GPS Society, Australia

Professional Member, The Institute of Electronics Information and Communication Engineers, Japan

Professional Member, The Korean Society of Surveying, Geodesy, Photogrammetry & Cartography

Professional Member, The Korean Society of Geographic Information System

Professional Member, The Korean Society for Aeronautical and Space Sciences

Professional Member, The Korean Society of Remote Sensing

PROFESSIONAL ACTIVITIES

Advisory Committee Member, The Korean National Geography Institute

Technical Committee Member, The Korean GPS/GNSS Association

Technical Committee Member, Professional GIS Korea

Technical Committee Member, International Symposium on GPS/GNSS

Invited Instructor, National Institute of Professional Administration

Invited Instructor, The Korean Agricultural and Rural Infrastructure Corporation

Invited Instructor, The Korean Highway Corporation