Big Data Research

For more than a decade, UNLV researchers have been conducting a world-class effort in various aspects of big data research. This program has been funded by federal and state agencies, as well as many industrial partners. Our researchers have addressed questions related to many fields, including big data, relative to national security and health issues.

We would like to introduce you to some of our researchers. Please feel free to contact us if we can help with future collaboration.
Big Data
Research Areas of Expertise

- Enhance quality of healthcare without increasing costs
- Connecting Medicaid data for greater in-depth analyses
- Expansion of public transparency
- Pediatric and adult asthma
- Chronic disease trends
- Complex weighted survey data
- Clinical programming
- Methodology development for personalized diagnosis
- Statistical bio-medical research

- Adaptive clinical trials
- Brain data analysis
- Machine learning
- Information retrieval
- Meta analysis
- Genome-wide meta-analysis
- Statistical modeling and model validation for clinical application and epidemiological studies
Why UNLV?

- UNLV is a leader among the state’s public entities dedicated to advancing big data research in the region and beyond.

- UNLV is located centrally in the west and houses the high-performance computing center also known as The National Supercomputing Institute.

- Additional data center space is located at Switch Communications, which houses the Intel Supercomputer “Cherry Creek” (26,000 cores) cluster. The site provides Federal and State researchers with state-of-the-art, highly-secure cloud computing.
Why UNLV?

- UNLV’s outstanding achievements in big data research, its success in forging public/private partnerships, and its excellent academic programs place the university at the forefront of the field.

- UNLV has acquired over $6 million in research funding in the last two years on wide-ranging subjects in the big data area, including:
  - Big data analytics;
  - Network science;
  - Healthcare informatics;
  - Social computing; and
  - Information privacy and security.
Faculty Involved in Big Data Research

Mr. Joseph Greenway  
Director, Center for Health Information Analysis

Dr. Ge Lin Kan  
Professor, Department of Environmental and Occupational Health

Dr. Sheniz Moonie  
Associate Professor of Epidemiology and Biostatistics, School of Community Health Sciences

Dr. Fatma Nasoz  
Assistant Professor, Department of Computer Science

Dr. Guogen Shan  
Assistant Professor, Department of Environmental and Occupational Health

Dr. Jay Shen  
Associate Dean, Professor, Health Care Administration and Policy

Dr. Haroon Stephen  
Assistant Professor, Department of Civil and Environmental Engineering and Construction

Dr. Kazem Taghva  
Professor/ Director of Minor in Information Technology, Department of Computer Science

Dr. Qing Wu  
Associate Professor of Biostatistics, Department of Environmental and Occupational Health

Dr. Justin Zhan  
Professor, Department of Computer Science
Big Data Research

Additional Resources

Big Data
Research Highlights
Big Data Research

Mr. Joseph Greenway
Director, Center for Health Information Analysis
Phone: (702) 895-4389
Email: joseph.greenway@unlv.edu

- Expertise
  - Collect, audit, analyze, and report on hospital in-patient claims data
  - State Innovation Model – increase quality of healthcare without increasing costs through HIE, data mining outcomes and collaborative efforts
  - Connecting Medicaid data for greater in depth analyses
  - Expansion of public transparency
Big Data Research

Mr. Joseph Greenway
Director, Center for Health Information Analysis

Relevant Publications
• Episiotomy and Obstetric Trauma in Nevada – J. Greenway, co-author.
• An Evaluation of Lead Contamination in Plastic Toys Collected from Day Care Centers in the Las Vegas Valley, Nevada, USA – based on master’s thesis.
• Sepsis: A Call for Incorporation of Regional Data and Improved Education Programs – J. Greenway, co-author, 2014.
Big Data Research

Dr. Ge Lin Kan

Professor, Department of Environmental and Occupational Health
Phone: (702) 895-1625
Email: ge.kan@unlv.edu

• Expertise
  • Geographic information system applications
  • Spatial epidemiology and spatial statistics
  • Big data in public health
  • Health disparity assessment
Big Data Research

Dr. Ge Lin Kan
Professor, Department of Environmental and Occupational Health

Recent Publications

Big Data Research

Dr. Sheniz Moonie
Associate Professor of Epidemiology and Biostatistics, School of Community Health Sciences

Phone: (702) 895-5843
Email: sheniz.moonie@unlv.edu

• Expertise
  • Pediatric and adult asthma
  • Asthma and obesity
  • Chronic disease trends
  • Complex weighted survey data
  • Clinical programming
Big Data Research

Dr. Sheniz Moonie
Associate Professor of Epidemiology and Biostatistics, School of Community Health Sciences

Relevant publications


Big Data Research

Dr. Fatma Nasoz
Assistant Professor, Department of Computer Science
Phone: (702) 895-0097
Email: fatma.nasoz@unlv.edu

• Expertise
  • Human computer interaction
  • Affectively intelligent systems
  • Machine learning
  • Deep learning
  • Cloud computing
Big Data Research

Dr. Fatma Nasoz
Assistant Professor, Department of Computer Science

Relevant Publications

Dr. Guogen Shan
Assistant Professor, Department of Environmental and Occupational Health
Phone: (702) 895-4413
Email: guogen.shan@unlv.edu

• Expertise
  • Adaptive clinical trials
  • Efficient study designs
  • Exact statistical Inference
  • Powerful non-parametric approaches
  • Brain data analysis

Power comparison between the proposed design and Simon’s design in early phase clinical trials for Oncology and AIDS studies.
Big Data Research

Dr. Guogen Shan
Assistant Professor, Department of Environmental and Occupational Health

Relevant Publications

- Shan, G. (2014), A better confidence interval for the sensitivity at a fixed level of specificity for diagnostic tests with continuous endpoints, Statistical Methods in Medical Research.

Three optimal designs that show requirement for 16 patients in the first stage for the design parameters.
Dr. Jay Shen
Associate Dean, Professor, Health Care Administration and Policy
Phone: (702) 895-5830
Email: jay.shen@unlv.edu

- Expertise
  - Health services research
  - Comparative effectiveness research
  - Outcome/quality of care and patient safety
  - Healthcare disparities
  - Health information technology (HIT) implementation
  - Large secondary data analysis
Big Data Research

Dr. Jay Shen
Associate Dean, Professor Health Care Administration and Policy

Relevant Publications

Big Data Research

Dr. Haroon Stephen
Assistant Professor, Department of Civil and Environmental Engineering
Director, GIS and Remote Sensing Core Lab
Phone: (702) 774-1463
Email: Haroon.Stephen@unlv.edu

• Research Interests
  • Sensors aboard UAS for remote sensing: testing and applications
  • UAS and GIS integration
  • Applications of UAS to resource mapping, monitoring, and management
  • Data fusion and data mining of multi-scale sources: UAS, aerial, and spaceborne sensors

Example of 3D view of buildings and land cover
Dr. Haroon Stephen  
Assistant Professor, Department of Civil and Environmental Engineering and Construction  

**Relevant Publications**

Big Data Research

Dr. Kazem Taghva
Professor/ Director of Minor in Information of Technology, Department of Computer Science
Phone: (702) 895-0873
Email: kazem.taghva@unlv.edu

• Research Interests
  • Databases
  • Machine learning
  • Information retrieval
Big Data Research

Dr. Kazem Taghva
Professor/ Director of Minor in Information Technology, Department of Computer Engineering

Relevant Publications

Big Data Research

Dr. Qing Wu
Associate Professor, Department of Epidemiology and Biostatistics
Phone: (702) 895-1439
Email: qing.wu@unlv.edu

- Research Interests
  - Meta analysis, genome-wide meta-analysis and mega-analysis
  - Statistical modeling and model validation for clinical application
  - Research design and methodology in clinical trials and epidemiological studies
  - Methodology development for personalized diagnosis
  - Statistical consulting in bio-medical research
Big Data Research

Dr. Qing Wu
Associate Professor, Department of Epidemiology and Biostatistics

Relevant Publications


Featured in Nature Reviews Endocrinology Research Highlights, Aug 2010 (6) 420:

Featured in Nature Reviews Endocrinology Research Highlights, Dec 2011 (4) 693:
Big Data Research

Dr. Justin Zhan
Professor, Department of Computer Science
Phone: (702) 895-2054
Email: justin.zhan@unlv.edu

• Research Interests
  • Big data analytics
  • Network science
  • Healthcare informatics
  • Social computing
  • Biomedical computing
  • Information privacy and security

Framework of a patient-centered electronic care support system
Big Data Research

Dr. Justin Zhan
Professor, Department of Computer Science

Relevant Publications