Wansoo Pak, Ph.D., ACTAR

Senior Consultant

8200 NW 41st Street, Suite 130
Doral, FL 33166

(786) 920-0935

ExpertWitness@rimkus.com

Background

Research engineer in the computational automotive domain, strong expertise in computational modeling, crash analysis, injury biomechanics, and pedestrian safety. Hands-on experience in the computational and physical tests of crash dummy models.

Dr. Wansoo Pak's primary areas of consulting expertise include injury consistency, biomechanics, and accident reconstruction. As a forensic investigator, Dr. Pak performs biomechanical analyses on cases involving low-speed accidents, driver determination, falling objects, slip and falls, amusement rides, and other accidental events. His past experience allows him to reconstruct accidents involving low-speed accidents, high-speed fatality collisions, pedestrian accidents, vehicle rollovers, and other types of accidents. He is a Certified Vehicle Accident Reconstructionist (ACTAR #4275).

Professional Engagements

Development of the finite element human body models to protect pedestrians in traffic accidents. Investigated kinematics and injury responses of pedestrians with respect to the posture, anthropometry, and vehicle types in accident simulations.

Professional Experience

- **Rimkus** **2019 – Present**
  - Senior Consultant
    Provides consulting services to insurance carriers, law firms, schools, and corporate clients. Evaluates and analyzes biomechanical systems, including voluntary and involuntary human motions. Provides human-injury impact analysis in vehicular accidents and cases involving slips/trips/falls or falling objects. Performs occupant motion studies to determine injury potential/consistency, seatbelt/helmet use, the effects of airbag interaction, and determination of occupant positions.

- **Virginia Tech, Center for Injury Biomechanics** **2015 – 2019**
  - Graduate Research Assistant
    Developed computational human models for pedestrian protection in traffic accidents. Performed model validation and calibration in component and full-body level against post-mortem human surrogate test data. Designed and analyzed the sensitivity study of car-to-pedestrian collisions using generic vehicle models with

respect to the vehicle shape, speed, and human anthropometry. Performed the New Car Assessment Program (NCAP) tests using computational pedestrian models. Developed the testing posture of the computational pedestrian model for the Euro NCAP pedestrian testing protocol. Designed the lower extremity injury measurement tool to assess the severity of the pedestrian injury. Investigated pedestrian biomechanical and injury responses regarding pre-impact posture and vehicle type.

- **University of Michigan Transportation Research Institute** **2014 – 2015**
  - Research Assistant
    Participated in the development and validation of a new pediatric head injury assessment tool. Developed the computational pediatric head model. Designed and performed head impact tests on various ground conditions based on the accident report. Validated the computational pediatric head model against the physical drop test data.

Education and Certifications

- **Biomedical Engineering, Ph.D.:** Virginia Tech (2019)
- **Mechanical Engineering, M.S.:** University of Michigan (2014)
- **Mechanical Engineering, B.S.:** Korea Polytechnic University (2011)
- **Accredited Traffic Accident Reconstructionist**

Continuing Education

- **Bosch CDR Technician**
- **At-Scene Traffic Crash/Traffic Homicide Investigation,** IPTM
- **Advanced Traffic Crash Investigation,** IPTM

Publications (Journal)

- W. Pak, D. Grindle, C.D. Untaroiu. "**The Influence of Gait Stance and Vehicle Type on Pedestrian Kinematics and Injury Risk,"** Journal of Biomechanical Engineering, 10.2021
- D. Grindle, W. Pak, B. Guleyupoglu, B. Koya, F.S. Gayzik, E. Song, C.D. Untaroiu. **"A detailed finite element model of a mid-sized male for the investigation of traffic pedestrian accidents,"** Journal of Engineering in Medicine, 03.2021.
- W. Pak, Y. Meng, J. Schap, B. Koya, F.S. Gayzik, C.D. Untaroiu. **"Development and validation of a finite element model of a small female pedestrian,"** Computer methods in biomechanics and biomedical engineering, 08.2020.
- W. Decker, B. Koya, W. Pak, C.D. Untaroiu, F.S. Gayzik. **"Evaluation of Finite Element Human Body Models for Use in a Standardized Protocol for Pedestrian Safety Assessment,"** Traffic Injury Prevention, 07.2019.
- W. Pak, Y. Meng, J.M. Schap, B. Koya, F.S. Gayzik, C.D. Untaroiu. **"Finite Element Model of a High-Stature Male Pedestrian for Simulating Car-to-Pedestrian Collisions,"** International Journal of Automotive Technology, 06.2019.
- C.D. Untaroiu, W. Pak, Y. Meng, J.M. Schap, B. Koya, F.S. Gayzik. **"A Finite Element Model of a Midsize Male for Simulating Pedestrian Accidents,"** Journal of Biomechanical Engineering, 01.2018.
- Y. Meng, W. Pak, B. Guleyupoglu, B. Koya, F.S. Gayzik, C.D. Untaroiu. **"A Finite Element Model of a Six-year-old Child for Simulating Pedestrian Accidents,"** Accident Analysis & Prevention, 01.2017.

Publications (Conference)

- W. Pak, D. Grindle, C.D. Untaroiu. **"The influence of gait stance and vehicle type on pedestrian kinematics and injury risk,"** 22nd ASME International Conference on Advanced Vehicle Technologies, 2020.
- W. Pak, B. Guleyupoglu, B. Koya, F.S. Gayzik, C.D. Untaroiu. **"Preliminary Validation of a Detailed Finite Element Model of a 50th Percentile Pedestrian Male,"** 15th International LS-DYNA Users Conference, 2018.
- C.D. Untaroiu, W. Pak, B. Guleyupoglu, B. Koya, F.S. Gayzik. **"Investigation of Pedestrian Kinematics and Injury Outcome Caused by a Traffic Accident with Respect to Pedestrian Anthropometry, Vehicle Shape and Pre-Impact Conditions,"** 15th International LS-DYNA Users Conference, 2018.
- W. Pak, Y. Meng, B. Guleyupoglu, J. Schap, B. Koya, F.S. Gayzik, C.D. Untaroiu. **"Investigation of Pedestrian Kinematics and Injury Responses with Respect to Pedestrian Anthropometry and Vehicle Shape,"** 45th International Workshop on Human Subjects for Biomechanical Research, 2017.
- W. Pak, C.D. Untaroiu. **"Development and Validation of a 95th Percentile Male Pedestrian Finite Element Model,"** 14th International LS-DYNA Users Conference, 2016.

Professional Presentations

- W. Pak, C.D. Untaroiu (2019). **"Investigation of pedestrian kinematics and injury responses with respect to various pre-impact conditions corresponding to traffic accidents",** 2019 GHBMC Users' Workshop.
- W. Pak, Y. Meng, B. Guleyupoglu, J. Schap, B. Koya, F.S. Gayzik, C.D. Untaroiu (2017). **"Investigation of Pedestrian Kinematics and Injury Responses with Respect to Pedestrian Anthropometry and Vehicle Shape,"** 45th International Workshop on Human Subjects for Biomechanical Research.
- W. Pak, C.D. Untaroiu (2017). **"Development and Validation of a 95th Percentile Male Pedestrian Finite Element Model,"** 13th Injury Biomechanics Symposium at the Ohio State University.
- W. Pak, C.D. Untaroiu, B. Guleyupoglu, B. Koya, F.S. Gayzik (2017). **"Detailed Finite Element Model of a 50th Percentile Male for Simulating Pedestrian Accidents,"** 61st Association for the Advancement of Automotive Medicine.
- W. Pak, C.D. Untaroiu (2016). **"Development and Preliminary Validation of a 5th Percentile Female Pedestrian Finite Element Model,"** 24th International Congress of Theoretical and Applied Mechanics.