

**Diana Glaser**  
**CURRICULUM VITAE**

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**EDUCATION:**

- Currently pursuing PhD. Study in Biomechanical Engineering on the University of Tennessee at Knoxville, since January 2005
- Graduate Engineer (Technical University) in civil engineering, RWTH-Aachen, Germany, 2001

**THESIS:**

Reconstruction of the Westfalen Soccer-Arena:

Numerical Simulation of the Dynamical Behavior of a Vertically Locomotive Field Construction

Grand: Hochtief AG Essen, Germany

Within the scope of a Feasibility Study

**EXPERIENCE SUMMARY**

More than seven years of experience in the university research and in the mechanical engineering services. This experience is in the area of biomedical engineering, automotive engineering and automotive supply industry, in mechanical and plant engineering, and in construction development.

In addition this experience includes strong background knowledge in mathematical modeling of biomechanical structures (AUTOLEV), vibration analysis, data acquisition (LabVIEW, WinDAQ), signal analysis (MATLAB), calculation and simulation programs (HyperWorks, ANSYS), programming languages (VBA, CSS, HTML) and common operating systems.

**PROFESSIONAL EXPERIENCE**

January 2005 - Present

CENTER FOR MUSCULOSKELETAL RESEARCH (CMR)  
MECHANICAL, AEROSPACE AND BIOMEDICAL ENGINEERING DEPARTMENT UNIVERSITY  
OF TENNESSEE

Position: Graduate Research Assistant

In the area of in vivo assessment of joint mechanics, data acquisition, system identification and vibration analysis:

→ Design of data acquisition system and applications for operation

→ Development of signal analysis software used for the analysis of patients undergoing joint replacement. The software includes graphical signal representation and signal evaluation.

→ Collecting experience in related fields such as biomechanics, dynamics, programming, system analysis and identification, medical data acquisition, anatomy and physiology.

→ Performing work for orthopedic companies in assessment and evaluation of joint kinematics and kinetics

- Assessing of joint kinetics using Kane's multi-bodies dynamics and evaluation of performance and changes after TKA or THA with various implants and surgical procedures
- Conduct in vivo clinical fluoroscopic studies of patients after total joint replacement to access the kinematics and the performance of implanted products using 3D model to 2D image registration technique and preparation of analysis for companies

Nov. 2001 - October 2004

INGENIEURBÜRO HUß UND FEICKERT GBR MBH, LIEDERBACH, GERMANY

Position: Mechanical engineer / Project manager

In the area of static and dynamic analysis, fatigue and buckling strength analysis, dynamic and thermal simulations and design optimizations:

- requirements analysis, proposal management, project management;
- meshing and finite element modeling, CAE simulations using HyperWorks and ANSYS, analysis and evaluation of the results, preparation of concepts for improvements and optimizations.

Position: Programmer

- Development of applications for analysis and evaluation of results, for model and input data analysis, and for automatically execution of proofs and verifications.

October 1999 - July 2001:

DEPARTMENT OF STATICS AND DYNAMICS, TECHNICAL UNIVERSITY RWTH-AACHEN, AACHEN, GERMANY

Position: Scientific assistant

Department: static and dynamic, surface structure, linear and non linear finite element methods.

- preparation and conduct of tutorials and workshops, preparation of tests and exams and technical consultation of students;
- structural modeling and numerical simulation of buildings and structures under static and dynamic influences using ANSYS and INFO-GRAPH, performing experiments and measurements, planning and constructing of the test setups, analysis of the results.

July 1998 - September 1999

DEPARTMENT OF STATICS AND DYNAMICS, TECHNICAL UNIVERSITY RWTH-AACHEN, AACHEN, GERMANY

Position: Scientific assistant

Department: mining engineering

- Literature research
- Poster, presentations, graphic design

#### **ADDITIONAL EXPERIENCE AND SPECIAL PROFESSIONAL INTEREST**

- Vibration analysis (from frequency up to transient analysis), spectral analysis;
- Artificial joint mechanical analysis;

- Mathematical modeling;
- Implant performance;
- Stress analysis, structural, dynamic and thermal CAE simulation;
- Topology, topography, shape, parameter and size optimization;
- Contact simulation, non linear buckling analysis;
- Linear and non linear analysis.

### **ADVANCED TRAINING AND SEMINARS**

FEBRUAR 2002: TOSCA – Optimization Seminar, introduction in structural optimization using the software TOSCA

JUNI 2000: “MONITORING, PROTECTION AND STRENGTHENING OF EUROPEAN BUILDING HERITAGE”, June 2000 in Florence, Italy