Prof. Dr. Rudolf Bisping

Interdisciplinary Scientist | Analytics, Acoustics and Technology Consultant

SASS - consult Prof. Dr. Rudolf Bisping
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EXECUTIVE PROFILE

Interdisciplinary scientist and consultant with a career spanning academic research, teaching, industry collaboration and technology consulting. Expertise connects the life sciences with psychoacoustics, psychometrics, digital signal processing, statistics, business intelligence, data mining and machine learning. University research and teaching since 1972; managing director of SASS and consultant to industry and academia since 1986.

Academic Background

STUDIES	Biochemistry, Mathematics and Psychology	Germany and the United States
DOCTORAL RESEARCH	Biochemistry of Memory	Heinrich Heine University Düsseldorf, Faculty of Natural Sciences; Colgate University, New York, USA
HABILITATION	Human Vocal Communication	Heinrich Heine University Düsseldorf, Faculty of Medicine

PUBLICATIONS **125 papers** **2 books** **1 book in preparation**

Research Focus

- Biochemistry of memory and vertebrate learning processes
- Human vocal communication and psychometrics of acoustic signals
- Physiological psychology, stress research and psychophysiological responses
- Experimental analysis of psychoacoustic data
- Digital processing of acoustic and psychophysiological signals
- Mathematical models, machine learning and stochastic-process analysis in the natural and social sciences

Academic Teaching and Supervision

Heinrich Heine University Düsseldorf	Supervision of diploma and doctoral theses in the Faculties of Natural Sciences and Medicine.
FOCUS	Psychometric assessment and digital processing of psychoacoustic and psychophysiological signals, including human voice signals, EEG, EMG, EDA and ERP.

Colgate University, New York, USA	Supervision of bachelor's projects and seminar papers in the Life Sciences.
FOCUS	Biochemistry of memory in vertebrates.

University of Duisburg-Essen	Supervision of diploma theses within the Integrated Physics Degree Programme (Diplom I).
FOCUS	Psychometric assessment and digital processing of technical acoustic signals, including vehicle interior and exterior noise for automotive-industry projects.

Professional Experience

SINCE 1972	**University Research and Teaching**	Psychological Institute, Heinrich Heine University Düsseldorf; Life Sciences Department, Colgate University, New York; Institute of Medical Psychology and member of the Faculty of Medicine, Heinrich Heine University Düsseldorf.
SINCE 1986	**Managing Director, SASS - Industrial and University Collaborative Projects**	European projects: Joint Research Project on Impulse Noise, SEFA and COSMA. German Federal Ministry of Education and Research (BMBF) projects: Leiser Verkehr (Low-Noise Transport) and VIVID.
SINCE 1986	**Managing Director, SASS - Consulting**	Consulting for the automotive, aviation, insurance, IT and telecommunications industries, as well as universities and retail organisations.

Core Expertise

Capabilities combine advanced analytical methods with practical implementation and industry-focused delivery.

AREA	CAPABILITIES	METHODS AND TOOLS
Business Intelligence	Reporting; predictive analytics; forecasting	MicroStrategy; Microsoft BI Development Studio
Data Mining, Text Mining and Machine Learning	Decision trees; neural networks; regression analysis; PCA; sensitivity analysis; support vector machines; text vectorisation; integrated text and data mining	MicroStrategy; SAS Enterprise Miner; IBM SPSS Modeler; MATLAB
Statistics	Biostatistical analysis; evaluation of experimental test series; cluster and factor analysis; multidimensional regression and scaling; analysis of variance; non-parametric tests; Monte Carlo risk analysis; time-series analysis	Oracle Crystal Ball; MATLAB; R; Origin; SAS Base; SAS Enterprise Guide; SAS JMP; SPSS Statistics; SigmaPlot
Databases	Analysis Services; data warehousing; data modelling	ERwin; Microsoft SQL Server; Oracle; SAS Warehouse Administrator; SQL Developer
Product Quality and Optimisation	Market research; psychometric product analysis	ArtemiS; Nuendo; SASSWin; SAS Base; SAS Enterprise Miner; IBM SPSS Modeler; SPSS Statistics
Software Development	Digital signal processing; data mining; statistics	Fortran; Maple; MATLAB/Simulink; Microsoft Visual Studio; R
Test Management	CRM-related test management	Clarify; IBM Rational Test; Mercury TestDirector; WinRunner; Microsoft Project
Project Management	Product optimisation and cross-functional project delivery	Microsoft Project
Documentation	Course materials for industrial seminars; status and final reports; test manuals; presentations; publications	Adobe InDesign; Adobe Photoshop; Corel Technical Suite; Microsoft Office; Lynx

Selected Client and Project References

ENGAGEMENT SECTORS

Automotive and mobility | Aerospace | Engineering | Insurance | Information technology | Telecommunications | Research and academia | Retail

Automotive and Mobility

- Adam Opel AG (Rüsselsheim)
- BMW AG (Munich)
- Daimler AG (Stuttgart)
- Faurecia (Paris)
- FEV Motorentechnik GmbH (Aachen)
- Ford AG (Cologne)
- Ford Motor Company (Dearborn, USA)
- General Motors (Detroit, USA)
- Renault (Guyancourt)
- Schaeffler Group - LuK (Bühl)
- Toyota Motor Corporation (Toyota City, Japan)
- Volkswagen AG (Wolfsburg)

Aerospace and Engineering

- EADS Deutschland GmbH (Ottobrunn)
- Forschungsvereinigung Verbrennungskraftmaschinen e.V. - FVV (Frankfurt)
- Robert Bosch GmbH (Stuttgart)

Analytics, IT and Telecommunications

- AC Nielsen (Hamburg)
- C&CC; GmbH (Bad Homburg)
- Cundus AG (Duisburg)
- Telekom Austria (Linz)

Research, Retail and Insurance

- Institute for Occupational Physiology (Dortmund)
- Karstadt AG (Essen)
- Nürnberger Versicherungsgruppe AG (Nuremberg)

PROFILE SCOPE

This profile summarises academic and consulting activities, methodological expertise and selected references. Further project details and publication information are available on request.