



René Roelands

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Dedicated and professional mechatronic system and embedded software architect with 20+ years' experience in the high-tech industrial environment. Structured with attention to detail, cooperative with focus on agreed decisions, analytical and result-driven.

EXPERIENCE

System Architect, KMWE

Eindhoven — 2019-present

As system architect I have been responsible for specification, design and commissioning of high-tech systems and modules.

Accomplishments

- Co-development high-end bake and develop system for Photomasks.
- Co-development chemical de-flash system.
- Developed PLC based control platform.
- Co-development of DigitalTWIN.
- Introduction of software development environment.
- Initiated and authored project proposals..

System Architect, IBS precision engineering

Eindhoven — 2013-2019

As system architect I have been responsible for specification, realization and commissioning of custom built measurement and qualification machines.

Accomplishments

- Delivered dedicated machines for subsystem qualification in high tech industry and research institutes, ASML, CERN, Carl Zeiss.
- Managed the industrialization of a 3D inline measurement system for the machine tool industry.
- Developed real-time wireless measurement system and successfully demonstrated its performance on a MAGLEV stage at EUSPEN conference.
- Developed a vibration compensation system for nanometer precision topography measurement system.
- Dynamical analysis mirror suspension.
- Successfully initiated and authored project proposals.

Mechatronics System Designer, ASML

Veldhoven — 2005-2013

As mechatronics designer I have been responsible for mechatronic subsystems in the fields of pneumatics, optics and robotics, materializing high level system requirements into integrated subsystems ready for volume production.

Accomplishments

- Translated system requirements into specifications for mechanics, electronics, software and control.
- Agreed and tracked specifications to co-developing partners as Carl Zeiss, RUAG and VDL.
- Designed, prototyped and implemented control algorithms.
- Modeled system dynamics.
- Specified, planned and executed the qualification of subsystems at supplier, local and customer sites.
- Transferred knowledge to customer support and manufacturing departments.
- Specified module qualification and diagnostic tooling.

Embedded Software Designer, ASML

Veldhoven — 2001-2005

As embedded software designer I was responsible for motion control software for opto-mechatronic systems. I translated control requirements into real-time software specifications, design and code.

Accomplishments

- Developed control algorithm for laser positioning system

- Specified, designed and implemented motion control software for opto-mechatronic systems, including pneumatics, linear motors, piezo- actuators, etc.
- Responsible for project delivery of qualified software.
- Chaired the motion control competence club.
- Implemented software qualification tooling.

Research Engineer, Delem

Eindhoven— 1999-2001

During my period as research engineer I was responsible for modeling and control of the hydraulics of industrial press brakes.

Accomplishments

- Designed and validated hydraulic press brake model.
- Created rapid-prototype environment for controller design.
- Redesigned valve controller.

Software Engineer, Delem

Eindhoven— 1997-1999

At Delem I worked as software designer and was responsible for the design and implementation of the job preparation software.

Accomplishments

- Designed and implemented a patented tool optimization module.
- Developed job preparation software.

EDUCATION

Eindhoven University of Technology

MSc in mechanical engineering, systems and control— 1991-2000

My graduation project was “Modeling Hydraulics, modeling, numerical and experimental validation of press brake model and control strategy”. During my graduation I helped connect the industrial environment of Delem to the academic environment of the TUE.

Boxtel Jacob Roelands Lyceum

Gymnasium Beta— 1990

Dutch, English, German, Latin, Mathematics B, Physics, Chemistry, Economics.

SKILLS

- Dutch, English, German,
- C, C++, C#, Python., Beckhoff PLC, Labview
- Matlab, Simulink, SimMechanics, xPC, Modelica, UNITY

COURSES

- Object Oriented Analysis & Design (ISES)
- Control Systems Tuning (CTT)
- Metrology and calibration of mechatronics systems (HTI)
- Labview Embedded Control and Monitoring/LabVIEW Core 1 (NI)

REFERENCES

Available upon request.