Kvålsvoll Design AS

Document: Curriculum Vitae Øyvind Kvålsvoll EN

Version: 2022-1

Date: 01.08.2022

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Øyvind Kvålsvoll

Personal	Øyvind Kvålsvoll, born 1967, Norwegian citizen.
About me	I like to create things, I like to work on engineering challenges as well as shape and visual appearance. I also enjoy working on abstractions like systems and concepts. Coming from a background as an engineer in software, electronics and control technology, I realize that the common denominator of my work is Product Development. I have been involved in a large variety of products and systems, including electronic circuit design, embedded software design, advanced multivariable non-linear control algorithms, industrial design, design of software systems for large control systems. The Kvålsvoll Design web page shows the work I have done in recent years, working on audio solutions: www.kvalsvoll.com
Skills	
Product design	Expertise in product design and development gained through participation in development projects ranging from physical products to software and services.
Simulation and modeling of dynamic systems	Modeling and simulation of dynamic multivariable systems. Mechanical – physical, electronics, electroacoustic systems. Also, any dynamic and complex system can be modeled and simulated using the same methods, such as economics, biology. In 2005 I created CDPSim, a simulator add-on app for CDP control system platform, this allows for simulation of any multivariable, non-linear system by direct programming of differential equations.
Cybernetics	Advanced control system design. Development of control algorithms, implementation in software, dynamic simulation. Mathematical modeling of dynamic systems for simulation purposes, simulation of nonlinear dynamic systems, control solutions for nonlinear systems. Concept development from problem definition to completed design. Acquired by specialization in cybernetics theory, digital and analog signal processing and practical realization of control applications.

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Software development	Software Design - Architect behind the Control Design Platform (CDP) software tools for control system development. This software is now used on several hundred marine & offshore applications; propulsion control, dynamic positioning, handling equipment. Software implementation in different languages. C/C++, Pascal, assembler. Real-time control applications, user interfaces, development tools, applications with graphical user interface.
Electronics	Electronics design, analog and digital. Designed several audio amplifiers, with unique circuit designs. Embedded micro-controller system. Instrumentation for control systems.
Audio: **Loudspeaker design, Electroacoustics, Acoustics**	Loudspeaker design based on simulation of complete electrical-mechanical-acoustic system, prototype building, 3D CAD design. In 2012 I started designing loudspeaker systems for home theater and home entertainment. Development is based on simulation. The new small speaker systems developed in 2020 set a new standard for sound - small size, acceptable cost, works in normal rooms, significantly better sound. Developed solutions for small room acoustics. Room acoustic treatment is now essentially a solved problem.
3D CAD	Drawing and modeling in 3D CAD software for product design, manufacturing, presentation visualization rendering.
Woodworking	Building loudspeaker prototypes. Lifelong experience working with wood.
Documentation and presentation	Technical documentation, user manuals, sales material, presentations.
Project management	Project manager for special development projects, such as the Control Design Platform (CDP) development tools.
Business development	Entrepreneur of several companies - Industrial Control Design AS (ICD), ICD Project AS. Business strategy development.
Languages	English and Norwegian spoken and written.
Professional	
Current	**Manager & owner Kvålsvoll Design AS** Design of high performance audio solutions. Loudspeakers, audio system solutions, product development. Developed several new technical solutions for sound reproduction. Developed new products utilizing those new technical solutions, showing significant performance improvements. www.kvalsvoll.com

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2011 	**Manager & owner Kvålsvoll Design AS** Establishing Kvålsvoll Design as a small engineering company delivering products and services based on specialized expertise in cybernetics and control system technology.
2007 	**Manager & owner Kvålsvoll Invest AS** Establishing Kvålsvoll Invest, to act as a base for future knowledge-based businesses.
2004 	**Chairman ICD Projects AS** Spin-off company from ICD, delivering turnkey control systems for offshore & handling industry, specialty heave-compensated solutions. We made several heave compensated winches, complete seismic vessel winch control packages and a tripod heave compensated platform. Business strategy development. This company was acquired by TTS Marine in 2007.
2002 	**R&D Manager Industrial Control Design AS** Industrial Control Design (ICD) developed and sold advanced software tools for real-time and control system development. Development of the Control Design Platform (CDP) software, chosen by Rolls-Royce Marine to be used as part of their Common-Control technology, for all marine applications such as vessel propulsion, dynamic positioning. Management of technology-related decisions and planning. Preparation of technical documentation, presentation materials for marketing, training and course materials. Supervisor for new employees. 2002 - 2007.
2002 	**Chairman Industrial Control Design AS** Industrial Control Design (ICD) developed and sold advanced software tools for real-time and control system development. Development of business strategy and plans. Marketing activities, company and product presentations. 2001 - 2007.

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1998 	**Development Engineer Odim AS** Introduced advanced cybernetics - starting with seismic cable handling winch systems, made several advanced and complex control solutions for handling devices like cable tension machines, cable laying machines with up to 20 wheel-pairs, capstan winches, traction winches, heave compensated systems, the all-new CTCU tension/traction unit for deep-sea fiber rope handling. Development of control strategy and control algorithms for dynamic systems. Simulation of dynamic systems (Matlab Simulink). Introduced and developed technology platform for controller-based control systems. Introduced software-based instrumentation (LabView). Programming in C++ (real-time systems, Win32, pSOS). 1998 - 2002.
1995 	**Development Engineer Ingeniørfirmaet Helgesen AS** Development of video surveillance equipment - software & hardware design. Programming in C++ for Windows (NT/Win32/Win-16). Programming of real-time embedded processor system (80x51). Electronics design. Product design. Preparation of documentation - technical and presentation materials. 1995 - 1998.
1994 	**Planning of company establishment** Planning of engineering company, in cooperation with Torgeir Sjursen. October 1994 – March 1995.
Education	
1994	**College of Engineering Automation Technology** College engineering education, More og Romsdal College (now NTNU - Aalesund University College), Automation Engineering. 1987-1988, 1988-1989, 1992/93, 1993-1994. Thesis (Simulation, Modeling, Regulation of OEV-Vessel) with specialization in control theory / cybernetics and object-oriented programming.
1987	**Preparatory College of Engineering** Møre og Romsdal Technical College, 1986/87.
1986	**Certificate (Professional Craftsman) Radio/ TV.** 3- year secondary school, Nørve Videregående (High School), 1983/ 84 – 1985/ 86.
Other	
1991	**Compulsory Military Service** Hærens Sambands Øvingsavdeling (Norwegian Army), 1990/91.

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1982 -	**Hobby activities, electronics and electro-acoustics** Construction of audio amplifiers. Construction of speaker systems. Circuit Design, PCB layout, mechanical design, construction and testing, electro-acoustic calculations, development of computer programs for simulation and calculation.
..	**Leisure activities** Mountaineering, climbing, skiing. Skied several interesting steep lines in the Sunnmøre mountains.

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