



## Curriculum vitae for Rud Pedersen

### Profile

Since 1996 I have worked with **software development** in both **large and small projects** and fit in well in both types. I have participated in all development phases from user requirements, analysis, design, implementation and test to delivery.

My engineer profile is within **process automation and control** which also was the focus at the beginning of my career. After years mainly within software development (**web and Windows applications**) creating products that support the end user, the latest years has been a return to control systems, where I enjoy to see real things being processed and plants working as required. Recently **test**, from unit test to factory acceptance test, has been my main task.

I emphasises a **structured and systematic approach** to the task at hand. Both with regards to the "big lines" and in the details, which are crucial to get the system to fulfil the requirements.

Working in different projects domains has enhanced my capabilities to get an **overview quickly** and I find it exciting to get insights into new business areas, technology and development methods.

As a person I am **curious** and listens carefully to others ideas and approaches. If I should choose three characteristics describing myself in work situations it will be: **commitment, thoughtful and execution.**

## Selected projects

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Customer Cobham

Period 12/2017 – present

Description Large scale project (1000+ requirements) in standardised environment (avionics). **Analysis of requirements and designing test strategy** for several functional areas in close cooperation with system engineering. **Creation, revision and execution of test cases** (including log analysis). Communication with third party for logs and test possibilities. A bit of **tool development for test automation** and continuous integration. Trouble shooter and advisor at test benches.

Technologies Perforce Helix, Python

Roles Test Architect, Tester and trouble shooter

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Owner Doceo

Period 07/2017 – present

Description Software Developer and Entrepreneur

Technologies MS Visual Studio 2017, C#, Azure, Micro-services, Docker, Git, Single Page Applications and web development

Roles Curious developer

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Employer MAN Diesel & Turbo

Period 2016 – 06/2017

Description **Generation of system test specifications supporting re-use.** Tool to support re-use of system test specifications (parametrised) and generation of final test document. Parser for TestComplete test items allows re-use; export to xml allowing any presentation using xslt and html.

**Bug finding and root cause analysis of more than 10 periodic issues.** Including script for automatic installation and upgrade on hardware.

**Project Management of automated GUI and system test.** Teaching development principles and system usage to test team in India; visited 4 times (started in 2013).

**Backend classes (C++) for reports** for Monitoring and Diagnosis tool.

Technologies Test Complete, Java script, XML, XSLT, HTML, CSS, Borland remote debugging. Windows batch scripting, C++.

Roles Test Facilitator, Architect, Developer, Tester

Employer	MAN Diesel & Turbo
Period	2013 – 2015
Description	<p><b>Development of test framework</b> for testing multi controller communication and functions (for new hardware platform).</p> <p><b>Interface for communication between Labview and test sequencer (TestComplete) via DLL.</b> Specification, porting and test.</p> <p>Analysis and development of <b>overall test strategy</b> from unit test over PC-based simulation of control algorithms to manually and fully automated test (including GUI) on real hardware.</p> <p><b>Method and tool for documentation of existing regression tests.</b> Documentation in source files is parsed and test specifications are generated.</p>
Technologies	Linux, network communication (custom made protocols), C++, Perl, QT debugger, GDB debugger, Labview, Boost, MS Visual Studio and porting to Borland XDE (make files), AscciDoc, Plant UML,
Roles	Test Facilitator, Architect, Developer, Tester
Employer	MAN Diesel & Turbo
Period	09/2011 – 05/2013
Description	<b>Initiator and supervisor of automated GUI test</b>
Technologies	Test Complete
Roles	Supervisor for student employees in Denmark and developers (testers) in India
Employer	MAN Diesel & Turbo
Period	08/2011 – 05/2013
Description	<p><b>Implementation and commissioning of new control strategy for Waste Heat Recovery systems</b> (power and/or steam turbine). Including requirements and interface specification with customers and third party suppliers.</p>
Technologies	C++, Doxygen, (MAN Diesel framework for application development), Synergy, Documentum
Roles	Project Manager, Developer, Commissioning

Employer	MAN Diesel & Turbo
Period	07/2011 – 10/2011
Description	<b>Investigation of how IBM Rhapsody can be used to model existing code base</b> , integration with change management system (Synergy)
Technologies	IBM Rhapsody
Roles	First mover (investigator)
Employer	MAN Diesel & Turbo
Period	07/2011 – 10/2011
Description	<b>Proposal for enhancement of work flow and development tools</b> . Analyses and specification of requirements to new tool. Proposal rejected due to lack of resources and risks
Technologies	IBM Doors
Roles	Initiator
Employer	MAN Diesel & Turbo
Period	08/2010 – 07/2011
Description	<b>Design and implementation of new test system for automatic test</b> of Engine Control System for dual fuel (gas) engines. Real time validation from I/O to Operator panel. Development of simple models for process simulation (in Labview) and scripting of test cases.
Technologies	Labview, SeqZap (test script tool), Synergy
Roles	Requirements, Architect, Developer and Tester.
Employer	MAN Diesel & Turbo
Period	09/2009 – 05/2010
Description	<b>Development and commissioning of new auto-tuning product for MC engines</b> based on existing auto-tuning for ME-engines.
Technologies	C++, doxygen, (MAN Diesel framework for application development), Synergy
Roles	Developer, Commissioning and data analyst

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Customer MAN Diesel & Turbo  
Period 04/2008 – 06/2009  
Description **Development and maintenance of operator (touch) screens**; among others presentation of collected data in a xy-chart. Maintenance of an alarm database. Selection of a tool for comparing databases. Application and system test. **SCRUM** development model  
Technologies C++, Win32 Api, Borland C++ Builder 6, CppUnit (test), IoComp Plot Pack, MS Access 2003 and 2007, Synergy (Configuration Management), TestComplete, Doxygen.  
Consultant Role Developer

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Customer Producer of hearing instruments  
Period 10/2006 – 06/2007  
Description Analysis, design, implementation and test of **framework** for communication with firmware and configuration of hearing instruments. **SCRUM** development model.  
Technologies Net 2.0, C#, VS2005, MbUnit test, TestDriven, TestComplete, MS Build, Clear Case UCM, Domain Specific Language (MS DSL), Code snippets and project templates.  
Consultant Role Developer

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Customer The Danish Agency for Governmental Management  
Period 08/2006 – 09/2006 (4 weeks)  
Description Test and trouble shooter for **large scale integration project**.  
Technologies Scripts.  
Consultant Role Tester

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Customer The Danish Agency for Governmental Management  
Period 07/2006 – 08/2006 (3 weeks)  
Description Windows application to **configure a transportation layer** consisting of several web and Windows services, including user manual and documentation.  
Technologies .Net 1.1, C#, XML, XPath, SourceSafe, VS 2005.  
Consultant Role Developer

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Customer	Selbit (web company, 1-10 employees)
Period	01/2006 – 06/2006
Description	<b>Design and development of a Smart Client framework</b> , including standard OR-mapper and tree view
Technologies	.Net 2.0, C#, Microsoft Applications Blocks (Composite UI and Logging), Nolics .Net 2005 OR-mapper, Infralution Virtual Treeview, VS2005, Code snippets and project templates, NUnit, SourceSafe, Web Service.
Consultant Role	Architect and developer

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Customer	Selbit (web company, 1-10 employees)
Period	12/2005 – 01/2006
Description	<b>Requirement analysis and specification</b> , including graphical user interface, plus project plan for a Windows application to handle action plans and feedback
Technologies	MS Visio for Enterprise Architects.
Consultant Role	Analyst and project manager

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Customer	Cabana A/S (web company, 1-10 employees)
Period	06/2005 – 12/2005 (part time 60%)
Description	<b>Development and maintenance</b> of the website for a large Danish union
Technologies	Sitecore CMS, Ankiro Sitesearch, ASP .Net 1.1, C#, XSLT, HTML, SourceSafe, VS 2003.
Consultant Role	Developer

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Customer	Selbit for Updata (web company, 1-10 employees)
Period	04/2005 – 05/2005
Description	<b>Design of the graphical user interface</b> for a web application administrating the data lines for a supplier of network solutions
Technologies	ASP .Net 1.1, C#, user controls, style sheets, HTML, VS 2003
Consultant Role	Developer

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Customer	Mærsk Data Defence
Period	03/2004 – 04/2005
Description	<b>Development of a large scale control and command system. V development model.</b>
Technologies	.Net, C#, OOD, UML, Rational XDE, ClearCase, NUnit, VS 2003
Consultant Role	Developer

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Customer	Selbit (web company, 1-10 employees)
Period	12/2003 – 12/2003
Description	<b>Internet payment system</b> using DIBS. Development of web-pages with interface to DIBS.
Technologies	ASP, HTML
Consultant Role	Developer

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Employer	Doceo (own company)
Period	10/2003 - 01/2004
Description	<b>Booking system</b> developed as a client-server solution on the .NET platform. Development of custom controls for .NET Windows Forms using GDI+.
Technologies	.Net, ADO .Net, SQL, MSDE, GDI+, C#, VS 2001
Roles	Architect and developer

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Employer	Doceo (own company)
Period	07/2001-10/2003 (spare time, employed at RISØ)
Description	Development of a <b>Video Content Management System</b> . The system makes it easy to make video instructions. Recording can be made from the PC-screen, bookmarks and step-by-step procedures can be added. The videos can be streamed to the end-user.
Technologies	Microsoft Windows Media, XML, XPATH, XSLT, HTML, VB 6.0, Win32 Api, VS 6, Multimedia
Roles	Architect and developer

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Employer	Risø
Period	01/2001 – 08/2003
Description	<b>Eye-tracking data analysis.</b> Synchronization of digital video recording with recording of eye-tracking data. Development of a system for enhanced analysis of eye-tracking data from several persons.
Technologies	.Net, ADO .Net, Windows Media, RS232, XML, MS Access, SQL, C#, VS 2001, Win32 Api
Roles	Architect, developer, initiator and project manager

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Employer	Risø for DSB
Period	08/2000 – 05/2001
Description	<b>Design and development (prototyping) of the user interface</b> for a new radio system for trains
Technologies	VB, Microsoft Automation, VBA, VS 6
Roles	Developer

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Employer	Risø
Period	08/2000 – 08/2003
Description	VINTHEC II (Visual INTERaction and Human Effectiveness in the Cockpit – Part II). 36 months <b>EU-research project</b> with participation of 8 European institutions. The objective was to develop methods to measure a pilot's co-operation and situation awareness, among others by use of eye-tracking recordings.
Technologies	.Net, ADO .Net, SQL, C# , MS Access, VB, Win32 Api, VS 6, VS 2001
Roles	Developer and Researcher.

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Employer	Risø
Period	05/2002 – 08/2003
Description	SafeSound. 36 months <b>EU-research project</b> with participation of 8 European institutions. The objective was to improve the safety on the run-way and in the air by means of enhanced use of sounds in the cockpit.
Technologies	.Net, ADO .Net, SQL ,C# , MS Access, VS 2001
Roles	Developer and Researcher.



Employer	LicEnergy (acquires Seven Technologies) (Oil and gas branch, approx. 100 employees)
Period	04/1999 – 06/1999
Description	<b>Analysis, selection and purchase of charting component</b> to be used at enterprise level
Technologies	ActiveX, C++, VS 6
Roles	Analyst and developer
Employer	LicEnergy (acquires Seven Technologies) (Oil and gas branch, approx. 100 employees)
Period	04/1999 – 08/2000
Description	<b>Implementation of the charting component</b> where the prototype was developed in the Industrial Ph.D. project (see the following project)
Technologies	ActiveX, OPC, ODBC, Microsoft Automation, C++, Win32 API, VS 6
Roles	Developer
Employer	Seven Technologies (SCADA system first mover, 10-50 employees)
Period	03/1996 – 04/1999
Description	<b>Design and development of prototypes for graphical presentation of process data</b> , including an analysis and assessment of multimedia technologies. (For an enhanced description see under education)
Technologies	ActiveX, VB, VBA, Multimedia, Win32 API, VS 6
Roles	Industrial Ph.D. fellow, architect and developer
Employer	Danbrew for Carlsberg (approx. 100 employees)
Period	02/1995 -03/1996
Description	Construction of new product lines. Worked with the process automation systems, mainly as <b>supervisor and project management</b> at the construction site. Participated in commissioning and test of the PLC programs.
Technologies	ABB PLCs, MS Office
Roles	Supervisor at construction site

## Employments and jobs

- 09/2009 **Development Engineer at Man Diesel & Turbo.**  
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06/2017 Control algorithms, software development and commissioning of 1) auto-tuning for MC Engines and 2) Waste Heat Recovery systems. Development of automated test systems for controllers and user interface.
- 2003 – **Freelance software developer.**  
2009 See selected projects for details
- 08/2000 **Researcher at Risø**, System Analysis Department,  
- Safety, Reliability and Human Factors group.  
08/2003 Work with design and evaluation of user interfaces, eye tracking (usage of equipment and development of software for analysis) and creation of GUI prototypes. Software development in Microsoft Visual Studio, .Net and C#.
- 2001 Participates in **Venture Cup** with an e-learning concept for recording and distribution of video instructions. Winner of phase 1 Best Business Idea.
- 04/1999 **Software developer at LicEnergy**, which acquires Seven  
- Technologies. Responsible for selection and buying of a  
08/2000 basis charting component and implementations of new visualisations as ActiveX controls. Development in Microsoft Visual Studio using C++ and MFC.
- 03/1996 **Industrial PhD fellow at Seven Technologies.** A 3 year  
- research project titled: A Systematic Approach to Design of  
04/1999 Process Displays. Integration of prototypes to the IGSS SCADA system. Software development in Visual Basic 6.0, especially ActiveX components.
- 02/1995 **Consulting engineer at Danbrew, Planning and**  
- **Design Division.** Supervisor at construction site at  
03/1996 Carlsberg for the electric and automation installations. Participated also in off-site software test and commissioning.
- 1991- Helper for disabled person, Frank Christensen.  
1995
- 1988 - Trainee at a farm in Australia.  
1989

## Education

1996 – 1999 **Industrial Ph.D.** Technical University of Denmark, Institute of Automation.

The aim of the project was to develop methods for display design that could be used by the industry and to create new visualisation techniques.

The display design problem was analysed in two situations: 1) When existing display solutions could be reused and 2) when new visualisation techniques had to be created. A display design method and new visualisation techniques are proposed and guidelines for creating new visualisation techniques are outlined.

Feb. 1995. **M.Sc. in Process Control.** Technical University of Denmark, Institute of Automation.

The aim of the final project was to allow the designer to specify control algorithms using mathematical equations (symbols) and let the developed tool generate Matlab code for simulation and ansi C code for implementation in the process computer.

Mar.-Jul. 1992 Traineeship at PLAPIQUI, university of Bahía Blanca, Argentina. Design and development of an interface for robot control from a PC.

Feb. 1992 3 weeks intensive course in Spanish at Necochea, Argentina.

## Languages

English Fluent, spoken and written

German Reading possible.

Spanish Reading and speaking possible after refreshment.

## Selected Courses

- 2017 **Pentest – Basic penetration test methods.**  
The Danish Society Of Engineers, IDA. 4 mini courses (4 hours each).
- 2016 **Power2Influence.**  
Learn2Lead A/S. Influence model. Many practical exercises. (3½ day residential plus preparation and follow up.)
- 2014 **Change Management and Communication.**  
Aros. Applying the theory to own business case. (2 + 1 day.)
- 2012 **Master-class in Requirement Specification.**  
DI ITEK (Danish ICT and electronics federation)  
How to write and structure requirements. Focus on requirements for embedded systems. (5 days with exercise)
- 2012 **Structural Tests.**  
Danish Technological Institute. (3 days). Test planning and management. Risk analysis and test methods from unit test to factory acceptance test.
- 2010 **ME superintendent.**  
Internal course at Man Diesel & Turbo. (4 days). Trouble shooting at electronic controlled two stroke engines.
- 2010 **Marine Engineering and Technology Introduction.**  
Internal course at Man Diesel & Turbo. (2 days)(in Danish: mini-maskinmester). Basic knowledge of two-stroke engines.
- 2009 **UML Modelling.**  
Internal course at Man Diesel & Turbo
- 2001 **Project Management.**  
Internal course at Risø by Morten Fangel from Fangel project management.
- 2000 **Sale of research for the industry.** Internal course at Risø by Wilson Learning Denmark.
- 1998 **Patent.** Course for PhD. students by the Danish Patent and Trademark Office.
- 1997-1998. **Business study of technology management and creation**  
by the Danish Academy of Technical Sciences as part of the industrial Ph.D.
- 1998 **Speech and Debate** (course in making presentations) by DiEU.
- 1996 **Modelling of complex systems.** PhD. course by Institute for Automation, DTU.

## Personal data

Head of Research Programme Nijs Duijm (Risø, 2003) has mentioned the following in a recommendation: "Rud is very engaged with his work and his colleagues. He is accurate and careful in solving his tasks. He is willing to engage in new activities and ready to suggest new opportunities for our team. He is a kind and modest person and a nice colleague."

I will say that the following words describe by personality: loyal, systematic, independent and polite.

## Spare time interests

Volunteering:

2007-2014 soccer coach for FC Lejre's young girls

Travel with family:

First to Mexico and USA (2010, 12 weeks) and then to Indonesia and Australia (2013, 10 weeks).

Further, I enjoy photography, trekking and a bit of exercise (bicycling and running).

Yours Sincerely

Chr. Rud Pedersen  
Maglehøj 16  
DK-4320 Lejre  
Denmark  
Phone: +45 2448 8165  
E-mail: [rud.pedersen@doceo.dk](mailto:rud.pedersen@doceo.dk)



Born 23. August 1969.

Married to Kristine. Children: Martha (1999), Signe (2001) and Elin (2004).