

14.12.04

Software Construction Laboratory

- Dr. Ivan Porres, Presentation of the Laboratory
- PhD. Student Viorel Preoteasa, Formal Methods: Reasoning about Pointers
- PhD. Student Luka Milovanov, Software Engineering: Gaudi Laboratory
- PhD. Student Marcus Alanen, Software Modeling: The Coral Tool
- Questions

- Leaders
 - Ralph-Johan Back
 - Ivan Porres
- Postdoctoral researcher
 - Victor Bos
- Doctoral students
 - Marcus Alanen
 - Sivakumar Ganesan
 - Luka Milovanov
 - Herman Norrgrann
 - Luigia Petre
 - Viorel Preoteasa
 - Cristina Seceleanu
- 15 undergraduate students

- Understand software
 - Software correctness
 - Software structuring and modularization
 - Software paradigms
 - Software performance and quality measurement
- How to build better software systems
 - Safer and more reliable
 - More understandable and maintainable
 - Cheaper
- Why?
 - Software is everywhere
 - It is an important part of our economy
 - ...but it is often of low quality
 - ...and very expensive

- Software Processes
 - Agile Methods
 - Software Process Improvement
- Formal Methods in Software Development
 - Programming logics
 - Program correctness
 - Programming methods
- Software Methods
 - Stepwise Feature Introduction
 - Model Driven Development
- Software Tools
 - Model Management
 - Software Construction Environments
 - Support for reasoning about software correctness
- Paradigms
 - Hybrid systems
 - Distributed systems
 - Object Oriented systems
 - High-level modeling

- Programming methodology group
 - Ralph Back -> Software Construction Lab
 - Johan Lilius -> Embedded Systems Lab
 - Kaisa Sere -> Distributed Systems Lab
 - Joakim von Wright -> Learning and Reasoning Lab
- Center of Excellence in Formal Methods in Programming
- CREST: Centre for Reliable Software Technology

Gaudi Software Factory

- A place to run non-trivial software projects
- Two outputs: software tools and first-hand experience on software development, tools and methods

Software Process Improvement

- Local industry seems receptive to new software processes and project management ideas

Software Architecture

- Reasoning about software architectures
- Environments for software architecture

- Center of Excellence on Formal Methods in Programming, 2002-07, Academy of Finland
- Academy Professorship and research funding, Ralph Back, 2002-07, Academy of Finland
- SPROUT: Stepwise Feature Introduction, 2002-04, Academy of Finland
- TORES: Tools for Reliable Software Construction, 2002-07, Tekes
- MICAS: Model Driven Engineering Tools, 2004, funded by Tekes and Nokia Research Center, in collaboration with ES lab

- Coordination of Software Engineering education at Åbo Akademi together with the Distributed Systems Laboratory
- Active collaboration with the Embedded Systems Laboratory and the Learning and Reasoning Laboratory
- We usually arrange at least one event per year
 - 11th Nordic Workshop on Programming and Software Development Tools and Techniques NWPER'2004, August 17-19, 2004
 - 2nd Nordic Workshop on UML, Modeling, Methods and Tools NWUML'2004, August 19-20, 2004