• Sorting Algorithms in Prolog - Mathematics Master Thesis
• Statistic data presentation (Flex, J2EE) Computer Science Master Thesis
• iTrain (e-Learning software)
  • Stratus - Content Builder, Content Player
  • Lesson Editor/Player
  • Reports - Viewer, Builder, Scheduler
• Whiteboard
• iPad Book
• Newgen
Purpose: Comparing well known sorting algorithms (having O(n log(n)) average case complexity) with the novel **Runsor**t method.

- Programming language used for the implementation - **Prolog**
- Used algorithms: Quicksort, Mergesort, **Improved Mergesort**, SAMsort, **New SAMSort**

Results:
- Quicksort very good for short lists without predefined order
- Mergesort and Improved Mergesort good for long lists without predefined order
- In case of long lists with predefined order Runsor wins in most situations with the New SAMsort and SAMsort
Purpose: Investigating new ways of statistic data presentation for e-Learning platforms.

- Technology used: Flex, BlazeDS, J2EE
- Referenced platforms: Moodle, OLAT

Results:
- Separate Module designed for statistic data visualisation, integrated within Adaptive e-Learning platform.
- Graphs presenting basic statistics, allowing to interpret information more easily.
- New features like query builder.
Stratus - Content Builder

- Create your own slide show
- Designed for rich e-Learning (but not only) content building
- Add Audio, Video, Images, Shapes, Texts, Buttons
- Map of slide and hotspots
- Repository manager
Stratus - Content Player

• Play your slide show

• Manipulate stage dimension for better HTML pages integration

• Steer your slide show from JavaScript or Flash
Lesson Editor/Player

- Capture your on-screen actions creating interactive e-Learning content
- Edit recorded lesson adding additional hotspots, text fields, captions (descriptive bubbles) or highlights.
- Play your lesson in two different modes: Watch-It (presentation) and Try-It (interactive).
- Additional features: spell checking, hinting, messaging or action history
Report Viewer/Builder/Scheduler

**Viewer:** Screenshot

- Present your Annual, Monthly, Weekly reports
- Customize your tables using Report Builder
- Export Reports to PDF, XLS or CSV

**Builder:** Screenshot

- Build your tabular reports
- Select columns from predefined "Datacubes"
- Customize styles of the columns
- Add Bar graphs or Pie charts to your report

**Scheduler:** Screenshot

- Schedule your reports to run them periodically
- Select different recipients (Company, Location, Staff member)
• Use iPad or Android Tablet to manage your appointments
• Check In or Check Out customers
• Give them recommendations
• Create new appointments for customers
• See customer history
Whiteboard

• See staff recent statistics

• Switch between statistics and books view

• Display advertisments of your products and services

• Clock in to your workplace

• See the actual staff scores
Newgen

• Complete solution to manage your company

• Add and govern your locations

• Book appointments and edit them in more details

• Manage your staff and their working time

• Connect your hardware (tills, card readers, printers) to work with the Newgen

• Close and open shifts in each location
The End

Thank you