Creative Higher Education

Aim: Improving Student Learning Experiences

Some *current projects:*

- Course Planner
  - Web-based interface to visually plan your courses (drag-drop)
  - Mathematical Optimization to optimize your plan
- Optimized TA Allocation
  - Web-based
  - Use optimization to assign the best TA to lab sections based on many factors and constraints
- Flexible Learning Modules
  - Web interface for creating courses with flexible content
- Visualize Code Execution
  - Illustrate what happens in the memory as code runs.

Creative Higher Education

Other ideas and potential projects:

Area	Example Projects	Skills / Technologies
Planning	• Optimization to plan your study hours, group work, priorities, etc.	• Optimization • …
Team formation	• How to optimally form teams or pair studdents?	
Interactive Campus Map	• Indoor navigation • Shows different events and routes	• Mobile-based development • Web-based development
DSS	• Support making decisions in uncertain situations (e.g. which major, courses, …?)	• Optimization • BBN, Simulations, ..
Educational tools	• Programming: self-tutor, guided Programming • CPU simulator (COSC211)	• Programming, HCI • AI, Expert Systems
Educational games	• Learn programming using games (Example) • e.g. use Minecraft to learn loops, etc.	• Same as above
Classroom tools	• note-taking tool • group interaction tool	• Programming (web,mobile) • Mind maps
Course Modules	• Module with Notes, Interactive Videos, Animations, Simulations, QAs, etc.	Programming
Exploratory studies	• What motivates students? • How to get students more engaged?	• Questionnaires / surveys
OTHER IDEAS	• YOU tell me… what are the problems that students face and that can be solved using technology?	