

Applicable for students of  
Bachelor and Master courses in Medical Engineering  
at FAU and partner universities

Erlangen, April 26, 2013

## Practical training on interdisciplinary innovations in medical engineering

at Pattern Recognition Lab, Computer Science Department 5, FAU Erlangen-Nuernberg

in cooperation with

### Innovation Think Tank at Siemens Healthcare

ECTS: 5 (open for Bachelors and Masters Students as practical research training) Duration:

1 month full time or 2 months part time;  
May 2013 onwards, max 12 students per month

**Description:** The goal of this training is to give students of medical engineering topics hands on experience on developing applications of pattern recognition techniques applied to interdisciplinary areas from preventive healthcare to therapeutic procedures. Each student will be given group project(s). The student along with the other group members needs to

1. Investigate the state of art which includes publication search, available algorithms and tools, the students also need to investigate where automation and pattern recognition could be applied within the assigned project(s) (Module 1).
2. Propose solutions: Develop concepts, algorithm and implementing the pattern recognition techniques on the identified areas in group (Module 2).
3. Document the outcomes as a research paper (Module 3).

**Module 1:** Investigate where automation and pattern recognition could be applied within assigned projects  
List of project areas:

- Preventive healthcare
- Sports medicine
- Screening methods
- Diagnostic examinations
- Therapeutic procedure

**Module 2:** Analysis and documentation of the pattern recognition methods and state of the art in project areas of Module 1.

Deliverable 1: Mid project presentation: Outcomes of module 1 and 2 in group.

**Module 3:** Applying pattern recognition techniques on assigned topics in project areas of Module 1 + 2.

Deliverable 2: Outcome presentation (Algorithm, prototype, documentation etc.) and documentation of outcomes as co-authored scientific research paper

Applications should be addressed to Sultan Haider ([sultan.haider@siemens.com](mailto:sultan.haider@siemens.com)) or to Tobias Zobel ([tobias.zobel@zimt.uni-erlangen.de](mailto:tobias.zobel@zimt.uni-erlangen.de))