Research Strategic Plan
(2011 – 2015)

OCTOBER 1, 2010
RESEARCH STRATEGIC PLAN
2011 - 2015

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Introduction
In the autumn of 2009, the staff of the Faculty of Computers and Information (FCI) at Assiut University chartered a Strategic Planning process for the FCI, to enhance the FCI activities. With the help of all staff, the time had arrived for building a set of strategies for engaging this new talent in the most creative and promising research directions. A Strategic Planning Committee was chartered to cross-cut various constituencies of the FCI community and to integrate input from across the FCI to build a shared vision of the future of computing and informatics in upper Egypt, reflecting on the global landscape and contemporary developments in science and technology. The overall product resulting from this inclusionary process was to be an actionable set of strategies for transforming the FCI in the next five years, building on the framework of the vision of the FCI.

FCI Vision
Faculty of Computer and Information- Assiut University is seeking to achieve excellence and innovation in education, scientific research and community services aspects over local and regional level.

FCI Mission
The Mission of Faculty of Computer and Information:
- Providing students with knowledge and scientific research in computer science, information technology and information science. Also develop student personality to make him able to innovate, work in teams and compete locally and internationally.
- Developing and improving educational courses continuously to keep pace with scientific progress and market needs.
- Awareness of continuous education importance, self learning and using new techniques in this field.
- Scientific research usage to achieve innovation in faculty aspects by using the study of economic, commercial and social importance.
- Providing social services in different faculty aspects.
• Strengthening the principles of credibility and ethics.

Research Aims
In the FCI mission, we state the following aims.
1) Build on excellence in basic and applied computer science and information systems and technology. Provide new, shared resources to serve this expansion.
2) Continue to press for the integration of fundamental research with the new research area.
3) Continue growth of FCI research programs by utilizing recently provided resources to increase the number of faculty members.
4) Invest in the application areas of computer science and information systems and technology.

Research Objectives & Themes
The specific objectives of the FCI research strategic plan incorporate three major themes:
1) Targeted strategic directions for research;
2) New or improved shared resources that support the research; and
3) Organizational strategies to improve collaboration and interdisciplinary interactions.

Targeted Strategic Research Directions
The FCI has identified many targeted research directions for continued growth and development over the next five years. The main research directions for the FCI during the period of this research plan are:
1) Operating Systems.
2) Parallel and Distributed Computing.
3) Graphics and Animation.
4) Grid Computing.
5) Bioinformatics.
6) Geographic Information Systems.
7) Mobile Computing and Applications.
9) Computer Networks.
10) Multimedia Systems.
## Research Directions for FCI Departments

The details of the research directions in each department are shown in the below table.

<table>
<thead>
<tr>
<th>Computer Science Department</th>
<th>Information Systems Department</th>
<th>Information Technology Department</th>
</tr>
</thead>
<tbody>
<tr>
<td>CS17. Video Processing</td>
<td></td>
<td>IT18. Web Systems and Technologies</td>
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<tr>
<td>CS18. Machine Vision</td>
<td></td>
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<tr>
<td>CS19. Human Computer Interaction</td>
<td></td>
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<td>CS20. Fault Tolerant Systems</td>
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<tr>
<td>CS21. Grid Computing</td>
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<td>CS22. Real Time Systems</td>
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<td>CS23. Power Aware Computing</td>
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<tr>
<td>CS24. Virtual and Augmented Reality</td>
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**Shared Resources**
Under the support of Assiut University and CIQAP, FCI will offer a number of widely used and highly rated shared or core resources. To support most effectively the FCI strategic research directions, FCI will enhance and expand current resources and develop new resources.

**New Shared Resources**
1) Access Grid Center
2) Multimedia Labs
3) High Performance Labs
4) GIS Labs

**Opportunities for Enhancing Collaborations**
We believe that by connecting the wealth of knowledge available within the FCI members, innovative and collaborative ideas and research projects would emerge. Some mechanisms include:
1) Seminars
2) Seed Grants Targeted to Interdisciplinary Collaborative Research
3) Promote Interactions with Other Research Departments and Centers in Assiut University and outside it
4) Promote/Enhance Interactions with Industry

**Research Action Plan**
Based on the FCI Strategic Plan, the following strategic and executive goals will be targeted.

**Strategic Goal**
a. Developing the FCI research matrix and the scientific activities.

**Executive Goals**
a1. Developing efficient research plan for the FCI departments and researchers.
a2. Establishing a concrete system to measure and enhance research skills.
a3. Research fund raising.
a4. Making active agreements between FCI and other scientific institutions and organizations.
a5. Increasing the representations of the FCI researchers in scientific conference and meetings.
**Logic Frame Matrix**

<table>
<thead>
<tr>
<th>Code</th>
<th>Goal</th>
<th>Activities</th>
<th>Period</th>
<th>Success Indicator</th>
<th>Costs ($\times 1000$)</th>
<th>Persons in Charge</th>
</tr>
</thead>
</table>
| a.1  | Developing efficient research plan for the FCI departments and researchers | • Identify national and new research attitudes  
• Develop research plans  
• Establish mechanism to benefit from scientific research in educational process | 7/2010 to 12/2010 | Investigate research plan give positive results | 15 | Vice Dean of Postgraduates’ AffAIRS AND RE search + Heads of Departments + Dr. Khalied Fathy |
| a.2  | Establishing a concrete system to measure and enhance research skills | • Establish database for scientific research  
• Training staff members and their assistants to raise their research efficiency  
• Establish laboratories for each department | 1/2011 to 6/2011 | Results of training reflection is positive and research laboratories is suitable | 250 | Vice Dean of Postgraduates’ AffAIRS AND RE search + Heads of Departments + Dr. Khalied Fathy |
| a.3  | Research fund raising | • Training to put competitive research suggestions  
• Contacting with companying and organization to increase research funds  
• Put mechanism to measure the reflection of research funds | 1/2011 to 6/2011 | Dealing with companies and organization to finance scientific research | 15 | Vice Dean of Postgraduates’ AffAIRS AND RE search + Heads of Departments + Dr. Khalied Fathy |
| a.4  | Making active agreements between FCI and other scientific institutions and organizations | • Visit universities and national, international institutions  
• Prepare reports of conventions | 7/2011 | Agreements are activated | 20 | Vice Dean of Postgraduates’ AffAIRS AND RE search + Heads of Departments + Dr. Khalied Fathy |
Conclusions

The Research Plan outlined in this Report is designed to provide a descriptive framework for aligning emerging research proposals across the FCI. It will serve to provide context to the University-wide Research Roadmap effort. This Strategic Research Plan will hopefully be useful to the FCI in prioritizing the allocation of resources, including facilities and infrastructure.

Faculty and Research Staff in the FCI are encouraged to reflect on the material in this Plan and to build collaborations and alliances across the University in aligning research proposals for the University-wide Research Roadmap process.