

Issues to be Addressed in the ASU SOA Workshop

The workshop aims at addressing the following Issues through its speakers, working sessions, and panel sessions.

1. Research

1. What is the impact of SOA on various computer science and engineering areas, including:
 - a. Software: software engineering, programming languages, databases, compilers, code generation, operating system, distributed systems, internet, collaboration and protocols, modeling, and simulation;
 - b. Hardware: computer organization, computer architecture, bus and interfacing, embedded systems, computer networks,
 - c. AI: knowledge representation, ontology, robotics, and planning;
 - d. CAD: reconfigurability/flexibility, software, image processing;
 - e. Fault tolerance: trustworthiness, dependability, reliability, availability, security, safety, confidentiality, and testability
 - f. Bioinformatics
2. What is the degree of the impact of SOA on these topics?
3. What are the new challenges and issues in SOA?
4. What kind of new technologies can be expected from SOA?
5. What kind of synergy and collaboration is possible for successful research projects/proposal based on SOA?
6. How can industries, government, and ASU work together to form a coherent research program?
7. What is the long term vision for SOA?

2. Education

1. What are the needs of STEM (Science, Technology, Engineering, and Mathematics) education in high schools?
2. What computer science related courses are currently taught in high schools?
3. What are the impacts of SOA on high school STEM education?
4. What are the impacts of SOA on community colleges and professional development?
5. What are the impacts of SOA on computer science undergraduate education?
6. What are the impacts of SOA on computer science graduate education?
7. What are the new challenges in SOA education? Do we need to have new approaches in teaching SOA? Should we teach them via robotics, gaming, and/or visualization?
8. Is there a market for SOA education for professional engineers? If so, what are the ways to establish that market?
9. What are the impacts of SOA on the job market?

10. Programming jobs are labor-intensive and are being sent overseas. Will SOA, particularly the application building (service consumption) have any impact on this trend?
11. Is it feasible to teach SOA in high schools, community colleges, and lower division of universities?
12. Can the higher-level approach in SOA application building save time to enable the students to learn an application domain, such as e-business, robotics, bioinformatics, so that they can apply their SOA knowledge in the application domain?
13. Can SOA, in conjunction with its application domain, create sustainable interests among high school students?
14. How can we increase the participation of women and minority in SOA education?

3. Application/Business

1. What is the best approach to use and apply SOA in a business domain?
2. What are possible business models for applying SOA?
3. What is the best strategy for applying SOA in a particularly business domain such as healthcare, telecommunication, bioengineering, supply chain, or finance.
4. What are the issues and challenges of applying SOA in a business domain?
5. As software services will be composed at runtime, how can the accountability and trustworthiness be established in an SOA application?
6. What is the state-of-the-art of SOA application in e-business, e-commerce, e-governance, and e-science?
7. What is the potential of applying SOA robotics, embedded systems, bioinformatics, and bioengineering?