

What is a good / influential (ASE)
paper on ...

Software Architecture

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Some Background

- Early Work since mid 80ies
- Regarded as emerging field in the beginning of the 90ies
c.f. Shaw / Garlan book
- Seminal pieces of Work
 - DSE Group @ Imperial College (Kramer / Magee) *Conic, Darwin, LTSA,...*
 - Garlan / Shaw *Compent - Connector*, various Spec.- Languages
 - ...
- Additional keywords:
 - Software components
 - CDLs, ADLs, ...
 - CBSE

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Software Architecture: what is it about

- components
- relations between components, configurations of components
- formal specs
- process:
 - design important structures of the software system e.g. p2p, client server ...
 - functional and (so called) non-functional requirements

And most importantly

it is *the* artifact of the **Design Stage** of software development

adjacent to **Requirements-** and **Implementation Stage**

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AML by David Wile, ASE 99

- **AML: an Architecture Meta-Language**
- primitive language with only three constructs: *elements*, *kinds*, and *relationships*
- makes clear distinction between components in configurations and „standalone“ components
- it is shown how popular ADLs can be expressed using AML
- also a clear relation to concepts of programming languages (lack of concepts)
- evolution can be monitored i.e. architectural constraints are observed/enforced at run time

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Test-beds from High-level Software Architecture Descriptions,

• abstract i.e. implementation independent system structure is described
Grundy et. al 2001

- *forward:*

generate components ... generate testbeds

- *backward:*

performance tests → related back to abstract software architecture

- evaluation



Summary & Conclusion

Wile

- a logic ...
 - small
 - formal
 - adaptable
- important elements of the domain
- evaluation

Grundy et al.

- abstract structure used to generate
 - implementation
 - assessment tools
- results are related back to abstract level
- evaluation

