Does software architecture research have any impact on software architecture practice?

The practitioners' view

Anna Liu, Eltjo Poort, Eoin Woods, Uwe Zdun

The Panel

- Anna Liu - formerly consulting architect at Microsoft, now at NICTA, WICSA 2014 chair
- Eltjo Poort - NL country lead architect at Logica
- Eoin Woods - software architect at UBS
- Uwe Zdun - professor at U. of Vienna, editor at IEEE Software

Eoin Woods

Research Deliverables

- ADLs - over 25 (AADL, Acme, ADLARS, ADML, … UniCon, Weaves, Wright, xADL, XYZ/ADL)
- Analysis formalisms and techniques
- Evaluation methods - at least 15 (ALPSM, ARID, ATAM, ATMA, ... SAAM, SAAMCS, SARA, TARA)
- Methods and techniques (decisions, requirements...)
- Quality property analysis and models
- Reference models and ontologies

The Impact on Practice

My experience of what gets used ...

- UML (maybe MDA) ... barely software architecture!
- Structural analysis tools (inspired by research)
- Viewpoints (a little - growing)
- More awareness of quality properties
- Evaluation - ATAM, SAAM, ... (a little)
- Some of the best known books (SAiP, DSA, ...)
- Accessible analysis techniques (e.g. performance)

Why so little?

Different Events

WICSA
ICSE
CAPE TOWN 2010
VARSA 2011
SHARK
ECSA 2010
CompArch 2012
June 25–28, 2012 Bertinoro, Italy
QoSA

Research

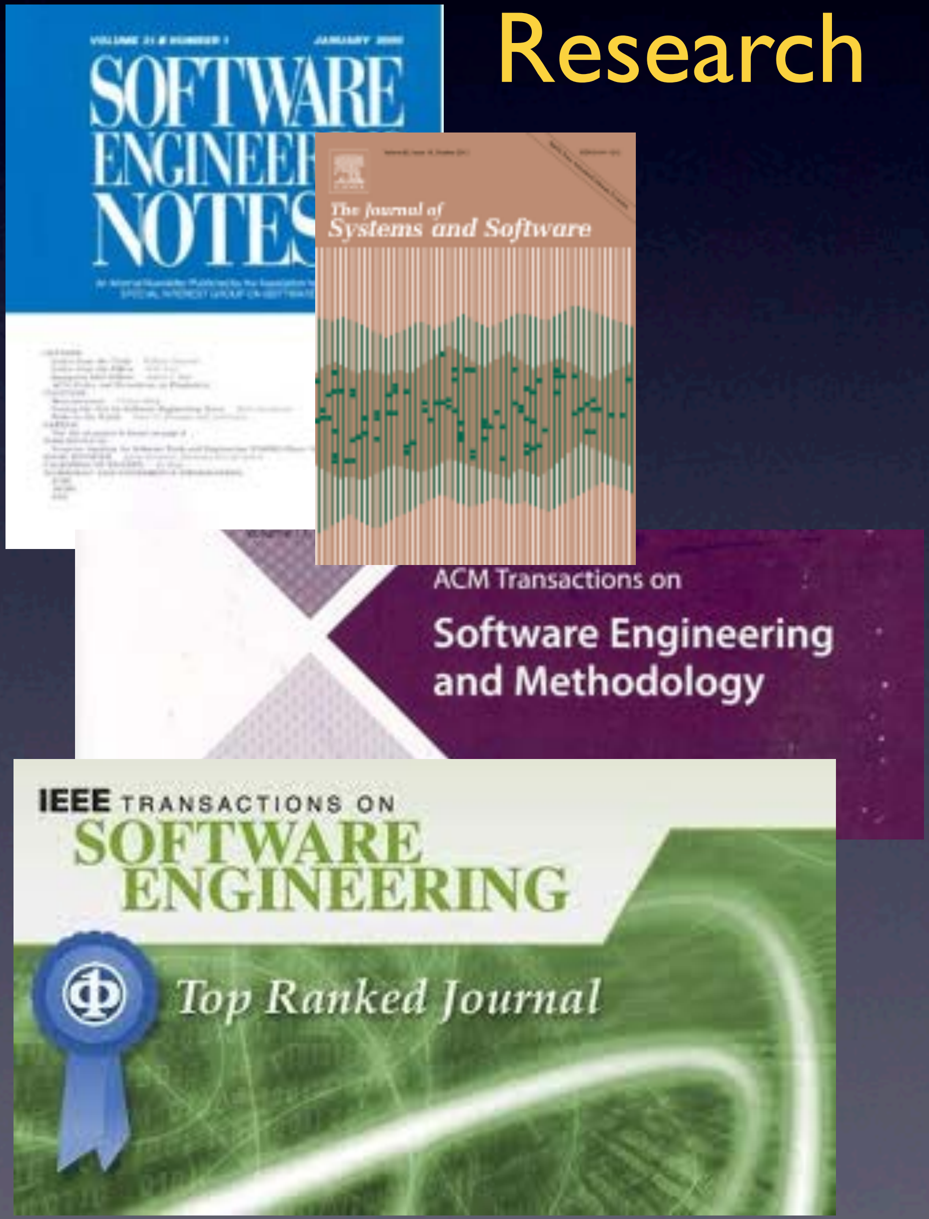
Practice

goto;
rence
jax 2012
LONDON
DevWeek 2013
ON THE UK'S BIGGES
Software Architect 2012
AGILE2012
DAL
ORACLE OPEN WORLD
SEPTEMBER 30 - OCTO
OOP
2013
SOFTWARE MEETS BUSINESS

Crossover

Different Sources

Research


SOFTWARE ENGINEERING NOTES
The Journal of Systems and Software
ACM Transactions on Software Engineering and Methodology
IEEE TRANSACTIONS ON SOFTWARE ENGINEERING
Top Ranked Journal

Practice

InfoQ
High Performance SOA - a Contradiction in Terms?
BRIAN GOETZ
JAVA CONCURRENCY IN PRACTICE
Think Python
O'REILLY
PATTERNS OF ENTERPRISE APPLICATION ARCHITECTURE
MARTIN FOWLER

Crossover

Different Priorities

Research	Practice
New knowledge	Risk management, RoI
Abstraction	Specifics: functions, technologies
Generality	Domain specifics
Publication	Delivery to customers
Semantics	Examples
Analysis	Testing
Formality, soundness	Usability, Cost of adoption
Trials, Experiments	Full Scale Usage

Suggestions

- A lot of "technology" exists but not much has transferred
  - do you care? (seriously - is it a problem? if so change something)
- Can you take problems from industry?
  - interact with the QCON people, use open source, startups, ...
- Why such proliferation?
  - are you competing? if not, can you cooperate and reuse?
- Make validation and transfer projects in their own right
  - be there for the long haul (even Spring took 5+ years!)
- Avoid silos of specialisation ... most problems have multi-dimensions

Always Remember

"*The purpose of software engineering is to control complexity, not to create it*"

Pamela Zave