

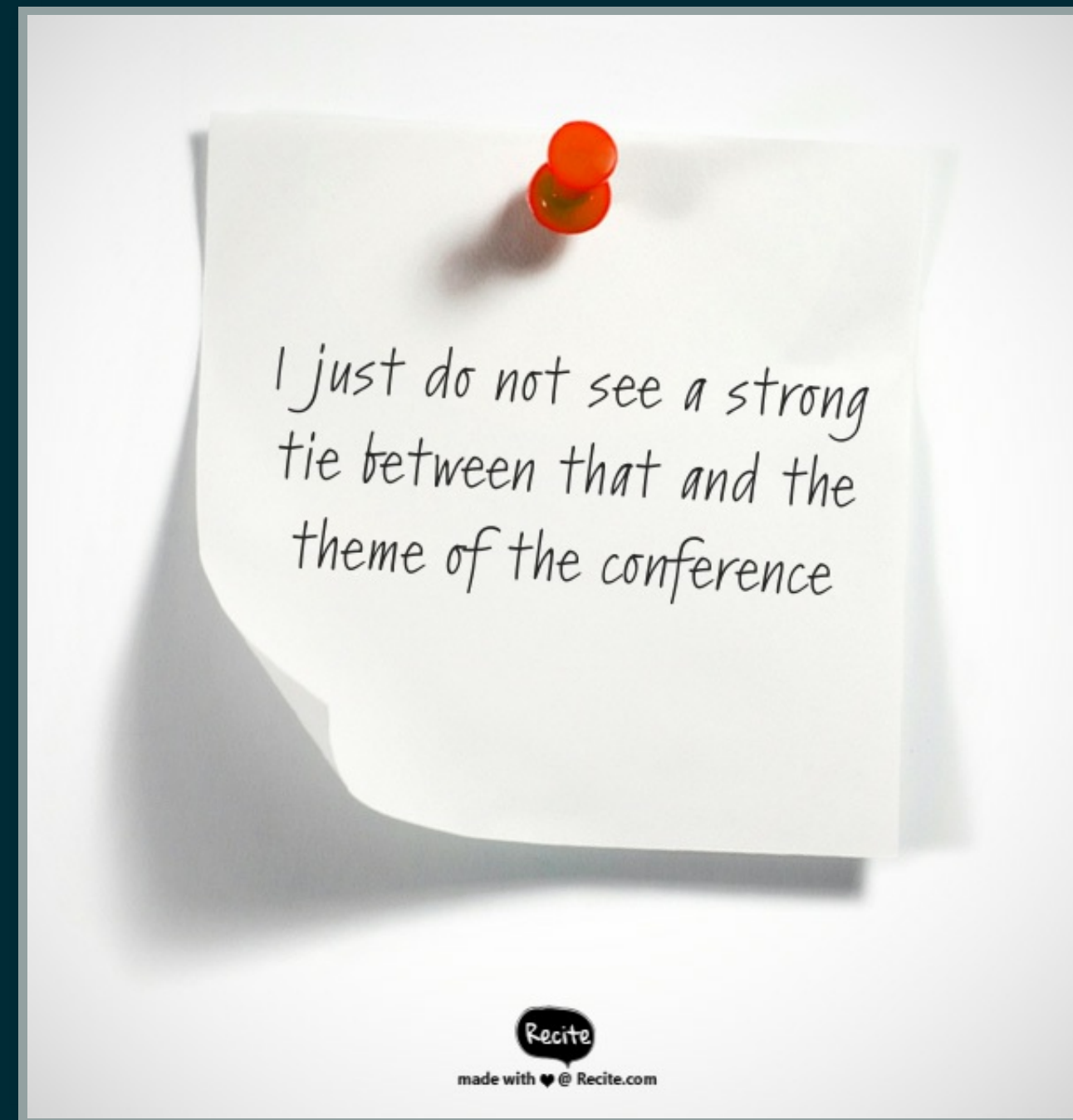
USING INDUSTRIAL ENGAGEMENT TO CREATE AND DEVELOP RESEARCH TIES WITHIN ACADEMIA

Chris Gwilliams

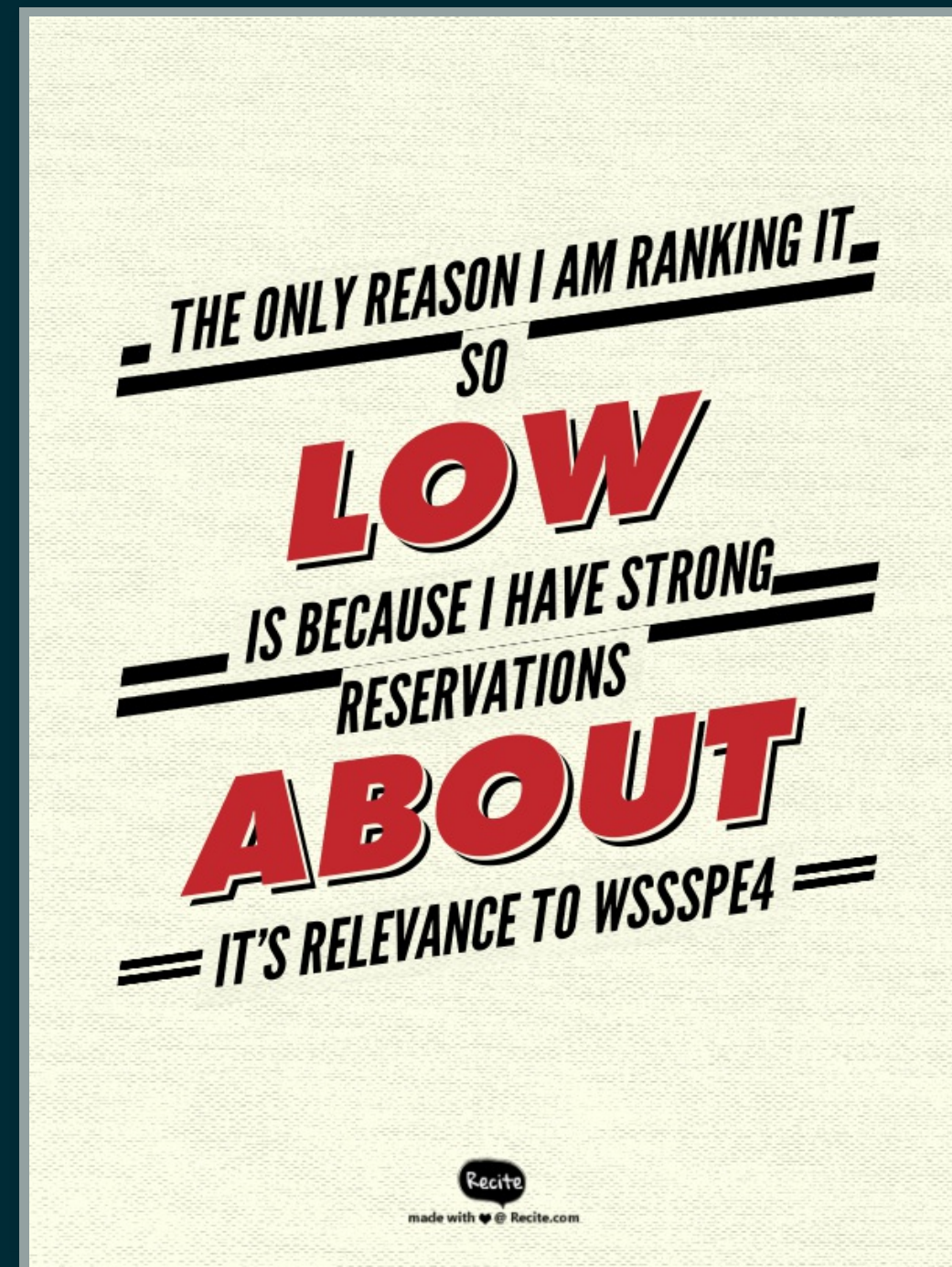
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REVIEWERS SAID...



REVIEWERS SAID...



SO, WHY AM I HERE?

Short papers are short, this is a chance to elaborate on:

- RSE vs Industry SE
- Applied Software Engineering course
- How we collaborate with industry
- Template framework for best practices

THE PROBLEM (IN A NUTSHELL)

Research software uses a variety of practices and encompasses a mix of backgrounds

Industry software also has a variety of background but does not (always) experience the same problems...



FRAMEWORKS

Industry has been solving this for decades with frameworks, best practices to follow and software development methodologies.

Not really taught in traditional computer science and definitely not for self taught/other disciplines.

Academia does not have grad schemes and startups struggle to find staff/time/money

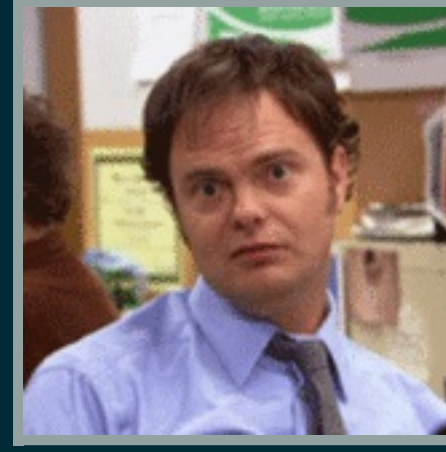
SOFTWARE ENGINEERING FRAMEWORK

We created a course that collaborates with industry to teach fundamental software engineering, coupled with the best practices.

Delivered using medium sized, real live industry projects for each module

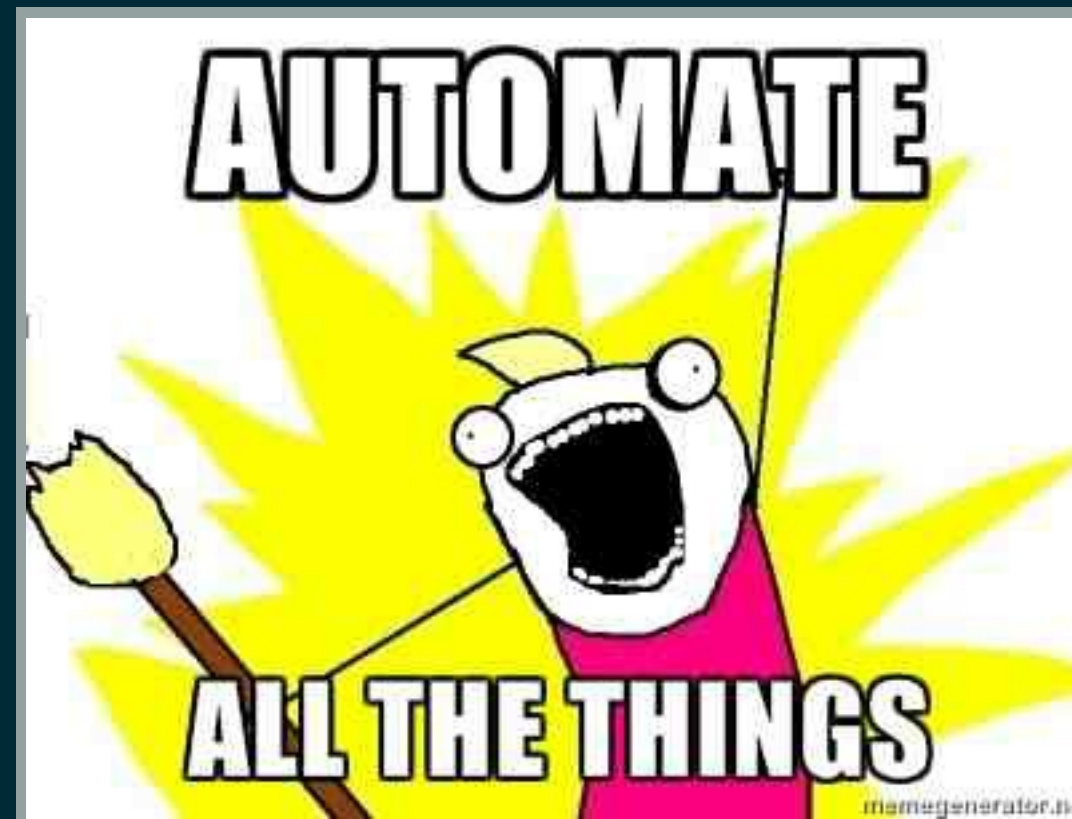
All my modules open source on github.com/encima

SO? WHAT DOES THAT MEAN?



WHAT WE TEACH/USE

- DevOps
- Automated Build Tools (Grunt, gulp, gradle, cargo)
- VCS (Git, git-flow)



WHAT WE TEACH/USE

- Agile project management
 - Standups
 - Sprints
 - Requirements gathering (and when to say no!)
- Documentation
- Automated and Instrumentation Testing
- Reproducible (Jupyter, Docker, Vagrant)

I SAY AGAIN...SO?

Our links with industry allow us to adapt to new changes in best practice.

Industry software engineering and RSE have no reason to be different.

We are *keen* to work with academics to keep this framework up to date and in use across the board.

PROBLEMS

OR I WROTE AN EXTRA SLIDE BECAUSE I TALKED TOO FAST

- More hands on than traditional lecturing
- Course has to stay up to date with all new versions of software
- Requires knowledge of all goings on in university in order to connect industry with the right people
- Academia is slow. Updates to courses take 18 months
- Need collaborators