RPC Prep – How to Read a Scientific Paper

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2/4/16
Why Are You Reading A Paper?

Learn?
Teach?
Enjoy?
What do you need?

• The paper
  – Electronic AND hard copy

• Computer with an internet connection
  – Ideally with access to the references (aka library subscriptions)

• Notebook – some way to take notes

• Bibtex or Endnote
  – How you can grow your own bibliography
  – You all should be creating your own research references
Reading the Paper – Pass 1

• Read the paper start to finish – don’t quit
• Don’t worry about the details
• Get a feeling for how it organized and what the points of emphasis are
• If you focus on anything focus on the abstract, intro, and conclusion
Reading the Paper – Pass 2

• Focus the images and figures
• Try to understand the paper just with the story being told by the images and figures
• Focus on the captions and text relevant to the images
• Why were these images chosen? A good paper will have good images.
Reading the Paper – Pass 3

• Slowly read the paper
• Focus on the details
• Take notes, highlight areas, write down questions
• Here you should triage what you “get” and what you don’t
Reading the Paper – Pass 4

- Follow the references
- Find code, websites, related paper material
- Here you should understand how the paper fits into the larger body of science/engineering
Heilmeier's Catechism

1. What is the problem, why is it hard?
2. How is it solved today?
3. What is the new technical idea; why can we succeed now?
4. What is the impact if successful?
5. How will the program be organized?
6. How will intermediate results be generated?
7. How will you measure progress?
8. What will it cost?
Elevator Pitch sentence structure:

FOR (target customer), WHO HAS (customer need), (product name) IS A (market category) THAT (one key benefit). UNLIKE (competition), THE PRODUCT (unique differentiator).
Group Breakout Session

Code Coverage of Assertions Using RTL Source Code Analysis

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Battery Lifetime-Aware Automotive Climate Control for Electric Vehicles
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A Control-Theoretic Approach for Energy Efficient CPU-GPU Subsystem in Mobile Platforms

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HAFIX: Hardware-Assisted Flow Integrity Extension

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Patrick Koeberl
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Dean Sullivan, Orlando Arias, Yier Jin
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Wrap Up

• Start reading your papers NOW
• Work on explaining it to both experts AND non-experts
• Make sure to understand the context of the article (technical and otherwise).
• Good luck!