

Research in CV

Vlad Shakhuro



18 December 2025

Outline

1. Reading papers

2. Getting into research

Where to find papers?

Literature review:

- google scholar
- semantic scholar

Fresh papers (signal-to-noise↓):

- google scholar citations/favorite authors
- scholar inbox
- arxiv-sanity
- twitter
- conference proceedings
- raw arxiv

What paper is worth to look at?

We need very simple filters to reduce flow of papers in 10-100 times

What paper is worth to look at?

We need very simple filters to reduce flow of papers in 10-100 times

- published in a good conference or journal (Core, Scimago ranks):
CVPR, ICCV/ECCV, NeurIPS (A*)
AAAI, ACM MM, ICLR, ICML, ICRA (A*)
WACV, IJCAI, IROS (A) PAMI, IJCV (journals)

What paper is worth to look at?

We need very simple filters to reduce flow of papers in 10-100 times

- published in a good conference or journal ([Core](#), [Scimago](#) ranks):
CVPR, ICCV/ECCV, NeurIPS (A*)
AAAI, ACM MM, ICLR, ICML, ICRA (A*)
WACV, IJCAI, IROS (A) PAMI, IJCV (journals)
- published by top research institution
- published by your favorite authors

What paper is worth to look at?

We need very simple filters to reduce flow of papers in 10-100 times

- published in a good conference or journal ([Core](#), [Scimago](#) ranks):
CVPR, ICCV/ECCV, NeurIPS (A*)
AAAI, ACM MM, ICLR, ICML, ICRA (A*)
WACV, IJCAI, IROS (A) PAMI, IJCV (journals)
 - published by top research institution
 - published by your favorite authors
-
- papers from your area of expertise

What paper is worth to look at?

We need very simple filters to reduce flow of papers in 10-100 times

- published in a good conference or journal (Core, Scimago ranks):
CVPR, ICCV/ECCV, NeurIPS (A*)
AAAI, ACM MM, ICLR, ICML, ICRA (A*)
WACV, IJCAI, IROS (A) PAMI, IJCV (journals)
 - published by top research institution
 - published by your favorite authors
-
- papers from your area of expertise
 - papers that open a new area of research (e.g. first papers on GAN, transformers, diffusion)
 - large-scale benchmarks

What paper is worth to look at?

We need very simple filters to reduce flow of papers in 10-100 times

- published in a good conference or journal (Core, Scimago ranks):
CVPR, ICCV/ECCV, NeurIPS (A*)
AAAI, ACM MM, ICLR, ICML, ICRA (A*)
WACV, IJCAI, IROS (A) PAMI, IJCV (journals)
 - published by top research institution
 - published by your favorite authors
-
- papers from your area of expertise
 - papers that open a new area of research (e.g. first papers on GAN, transformers, diffusion)
 - large-scale benchmarks
 - from crowded area (diffusion, NeRF)? think twice

Why read a paper?

What will be your **output**?

- for yourself → write reviews, optionally publish online
- for lecture, seminar → slides and feedback from listeners

Organizing seminars

Seminar is way to effectively review fresh work. May be in-depth and shallow. Working scheme for a shallow seminar:

- every week at a fixed time
- 1 hour, 2 speakers
- 2-3 papers per speaker
- pool of good papers to choose
- pool of at least 10 speakers
- all speakers make presentation in their turn, order is looped
- 1 person is responsible for organization

Writing reviews

Plan for review:

1. Title, links
2. Short description
3. Conference
4. Novelty
5. Method description
6. Evaluation
7. Advantages and shortcomings
8. (optional) Usefulness for production

Reading a paper

Method paper:

Cheng et al. Putting the Object Back into Video Object Segmentation.
arXiv:2310.1298

Dataset paper:

Ding et al. MOSE: A New Dataset for Video Object Segmentation in
Complex Scenes. ICCV 2023

Outline

1. Reading papers

2. Getting into research

What is PhD?

Main loop:

Read papers, experiment with demos

Look for problems to be solved

Found problem, loop:

- formulate experiment idea
- conduct experiment to justify or reject idea
- problem solved, idea is novel enough? → publish

3+ papers → concatenate, add introduction and conclusion, your dissertation is ready. Start preparing for defence

Secondary loop:

teaching

mentoring junior colleagues

Academia vs industry

Academia hierarchy:

Industry vs academia:

- more resources
- less freedom
- less teaching

Criteria for a good research lab

- Quality of publications
- Supportive scientific supervisor and research group
- Resources (money, GPUs, relations with other research groups)

Conclusion

We reviewed two topics:

- papers: how to find and read them
- how research is organized in academia