OTTAWA 2023

64TH WORLD STATISTICS CONGRESS

Session 96

Computational competencies of the modern statistician

Mark P.J. van der Loo
Statistics Netherlands
17 July 17:00

Computing with data

“It is increasingly clear that computing is […] an essential skill for statisticians […].”

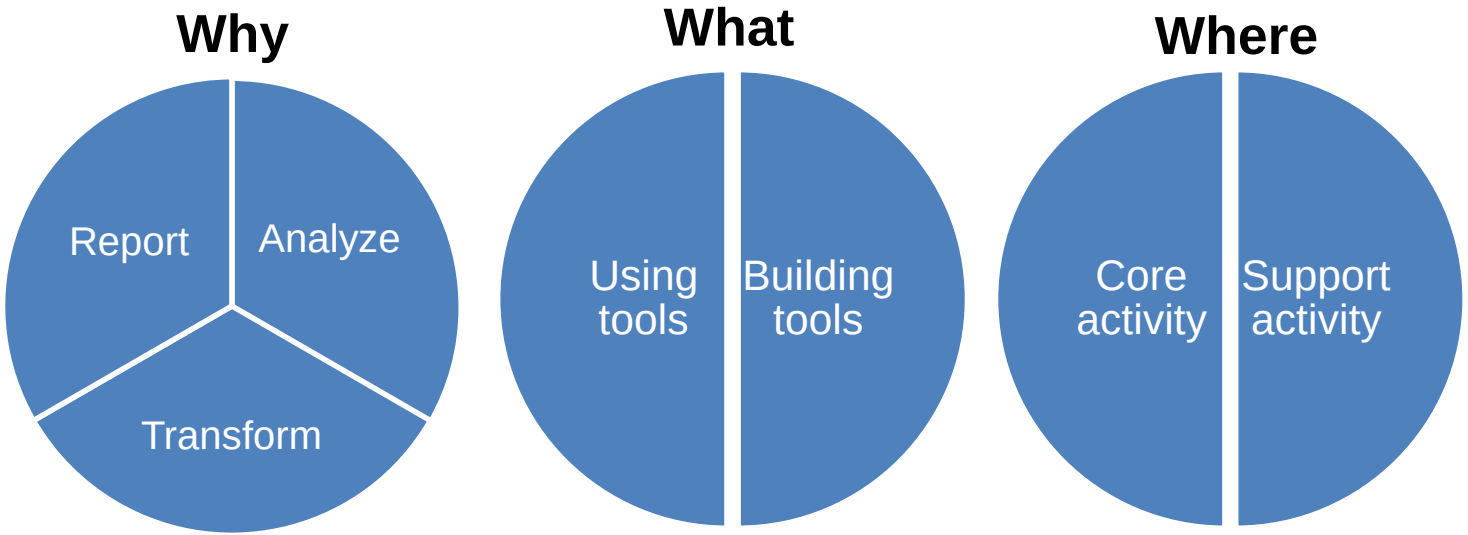
Nolan and Temple Lang (2010)

“Computing is as important as mathematics in both statistical practice and research […]”

Nolan and Temple Lang (2010)

Nolan D, Temple Lang D. Integrating computing and data technologies into the statistics curricula. in: Proceedings of the Eighth International Conference on Teaching Statistics; 2010. pp. 1-6.

Computing in the statistical office



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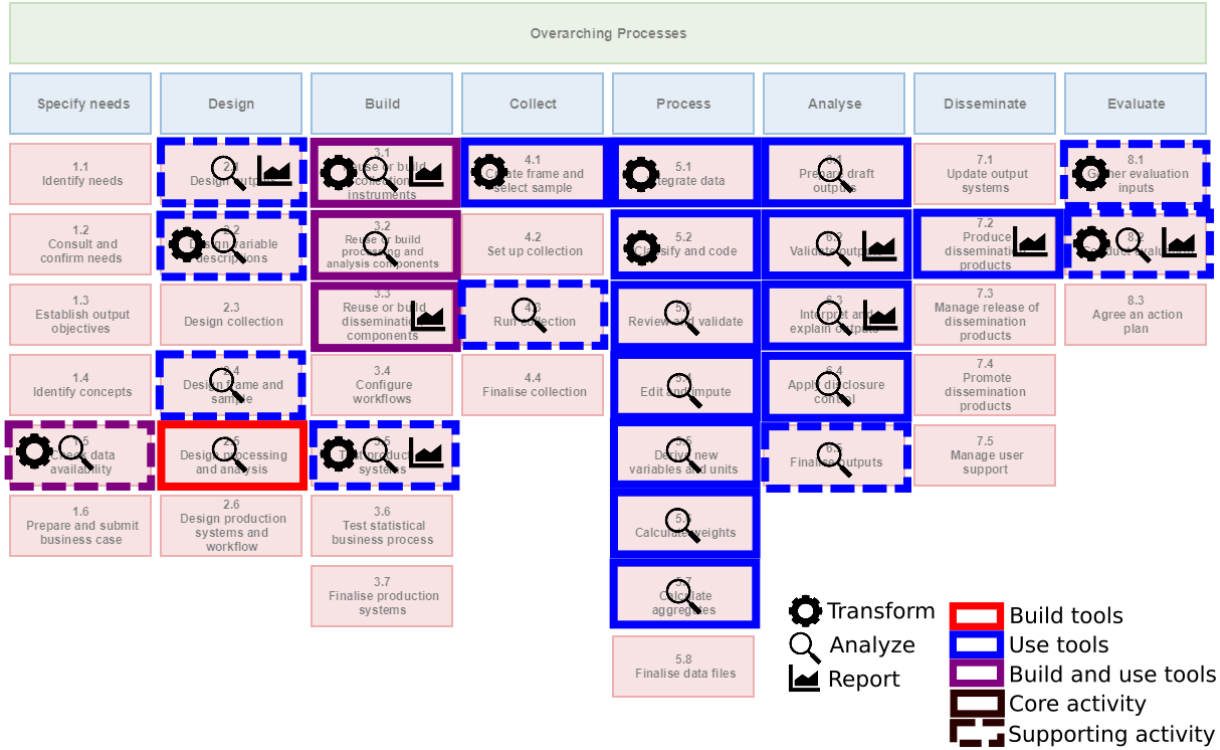
Computing with data



Van der Loo, MPJ (2021) Computing in the Statistical Office. Statistical Journal of the IAOS 37 (2021) 1023–1036

Trends in official statistics community

- More standardization
- More flexibility/agility
- More tailormade statistics
- More automation
- More separation of content from code
- More output / experimental statistics
- More data sources
- …

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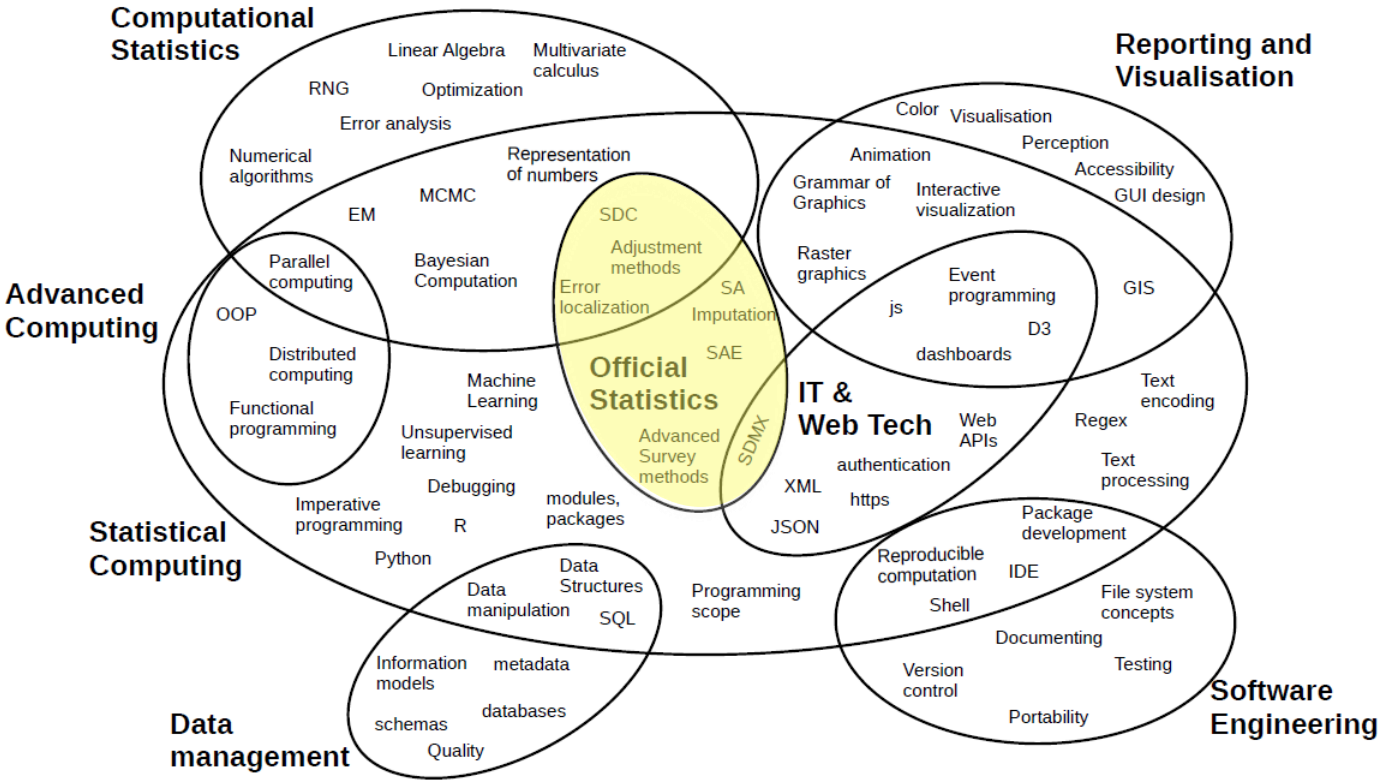
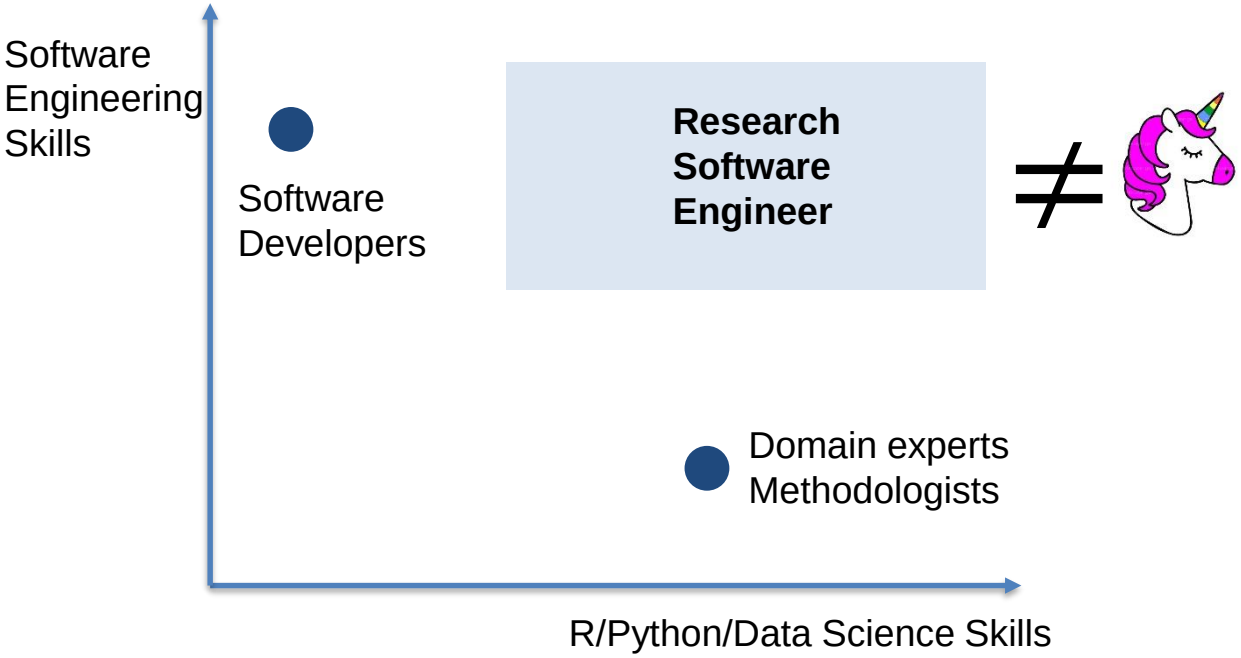
Topics for computing in official statistics

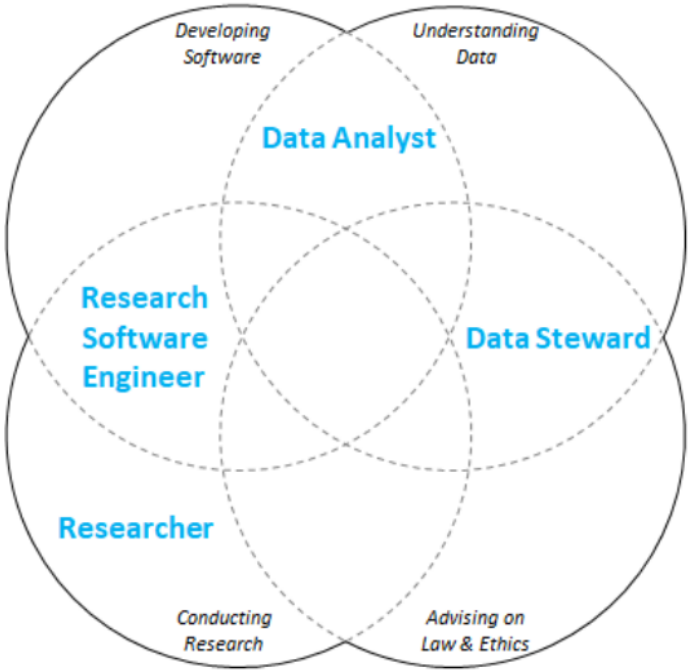


Adapted from: Nolan D, Temple Lang D. (2010) *Proc. of the 8th International Conference on Teaching Statistics* 1-6.

Areas of expertise



The Research Software Engineer



An **RSE** is responsible for **software engineering** based on an **understanding of the research goals**

A **data analyst** is responsible for **conducting analysis** on the data based on an **understanding of software**

Barker M, Dumolyn B, van Nieuwerburgh I, Castle D, Arenas M, Repanas K, et al. Building digital workforce capacity and skills for data-intensive science. (OECD); 2020

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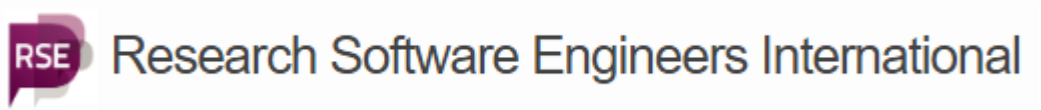
The Rise of the Research Software Engineer

Research software is fundamental to today's research, yet it does not receive the recognition it deserves.

Akhmerov et al. (2019)



researchsoftware.org

RSE associations:
BE, DE, NL, Nordic Countries, AUS+NZ, UK, US, DK, *Asia*

Akhmerov A, Cruz M, Drost N, Hof C, Knapen T, Kuzak M, et al. (2019) Raising the profile of research software: Recommendations for funding agencies and research institutions. Tech. Rep., Netherlands eScience Center, Amsterdam, the Netherlands.

Summary / Discussion

- Computing with data pervades the statistical office (it always has)
- There is a gap between IT and Methodologist/Domain experts (there always was)
- The role of Research Software Engineer (who is *not* a unicorn) fills this space.

More on skills and competences? Join my talk in IPS 331 Tue 16:00-17:25
Contact: mpj.vanderloo@cbs.nl

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THANK YOU.

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