

# THE FUTURE OF SOFTWARE ENGINEERING FOR AI- ENABLED SYSTEMS?

(closing remarks)

Christian Kaestner

# WHAT ARE NEW SOFTWARE ENGINEERING CHALLENGES?



*Gaps? Research needs? Adaptation of existing methods?*

# ARE SOFTWARE ENGINEERS DISAPPEARING?

*[Tweet](#)*

see also Andrej Karpathy. [Software 2.0](#). Blog, 2017

## Speaker notes

Andrej Karpathy is the director of AI at Tesla and coined the term Software 2.0

# ARE DATA SCIENTISTS DISAPPEARING?



1,616 views | Apr 7, 2020, 10:10am EDT

## AutoML 2.0: Is The Data Scientist Obsolete?



**Ryohei Fujimaki** Contributor

**COGNITIVE WORLD** Contributor Group ⓘ

AI

*Ryohei Fujimaki Ph.D. is founder and CEO of dotData*

## **f It's an AutoML World**



The world of AutoML has been proliferating over the past few years - and with a recession



looming, the notion of automating the

Ryohei Fujimaki. [AutoML 2.0: Is The Data Scientist Obsolete?](#) Forbes, 2020

# ARE DATA SCIENTISTS DISAPPEARING?

*However, AutoML does not spell the end of data scientists, as it doesn't "AutoSelect" a business problem to solve, it doesn't AutoSelect indicative data, it doesn't AutoAlign stakeholders, it doesn't provide AutoEthics in the face of potential bias, it doesn't provide AutoIntegration with the rest of your product, and it doesn't provide AutoMarketing after the fact. -- [Frederik Bussler](#)*

Frederik Bussler. [Will AutoML Be the End of Data Scientists?](#), Blog 2020

**SE4AI RESEARCH: MORE SE POWER TO DATA  
SCIENTISTS?**

**SE4AI RESEARCH: MORE DS POWER TO SOFTWARE  
ENGINEERS?**







**Bogdan Vasilescu**

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Replying to [@p0nk](#) and [@AndrzejWasowski](#)

Virtually *\*everyone\** is / will soon be building ML applications. Only few can afford dedicated software engineers to team up with, or SE education for themselves. It would be more inclusive to build SE into the ML processes more fundamentally, so that everyone could build better

12:27 PM · Jun 19, 2020 · [Twitter for iPhone](#)



# ANALOGY





# ANALOGY



*(better tools don't replace the knowledge to use them)*

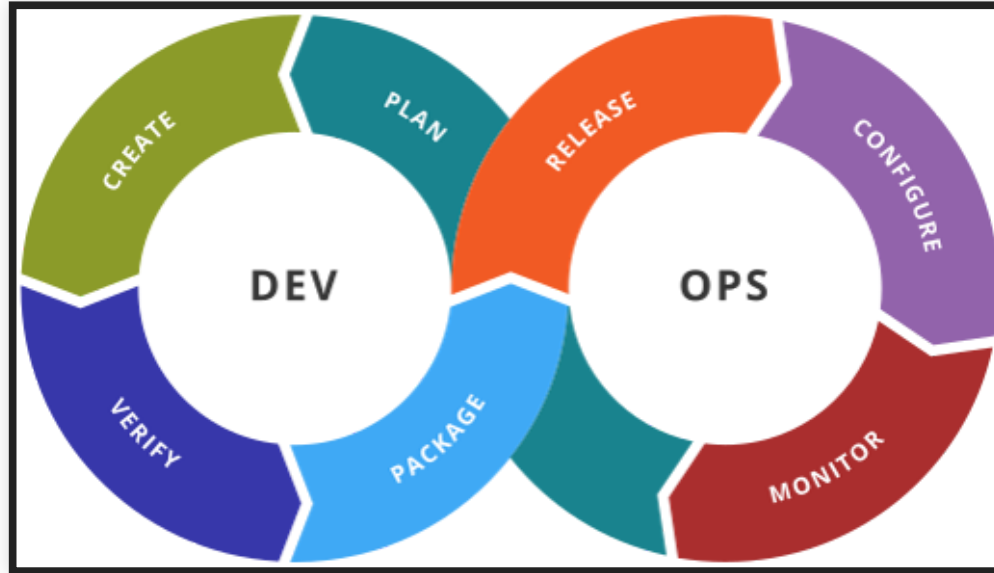
# MY VIEW

*This is an education problem, more than a research problem.*

*Interdisciplinary teams, mutual awareness and understanding*

*Software engineers and data scientists will each play an essential role*

# DEVOPS AS A ROLE MODEL



Joint responsibilities, joint processes, joint tools, joint vocabulary

# FEEDBACK

# SOME THINGS WE TRIED

- Clear specifications for homework, pass/fail grading
- Open-ended reading quizzes
- Individual assignments and readings in pairs
- Team project mostly in second half of semester
- Guest lectures



# FEEDBACK

- What was useful?
- What could be improved?
- Where did we overdo it with the homework?
- Ideas for better remote teaching?



# THANK YOU!

