

# AGENDA

**ABOUT ME** 

**MOTIVATION:** REDEFINING TEST AUTOMATION

BACKGROUND: AI, MACHINE LEARNING, TESTING

**AI-DRIVEN TESTING:** A NEW ERA OF TEST AUTOMATION

CONCLUSION

🚯 AISTA



### AUTOMATION

MACHINES WORKING WITHOUT DIRECT HUMAN CONTROL

## au·to·ma·tion

/ˌôdəˈmāSH(ə)n/ noun

1. Capable of starting, operating, and completing independently.

**AISTA** 

2. Use of various control systems for operating machinery and equipment with minimal human intervention.











Artificial Intelligence for Software Testing (AIST) is an emerging field aimed at the development of AI systems to test software, methods to test AI systems, and ultimately designing software that is capable of self-testing and self-healing.

Ultimate

AISTA















# the science of getting computers to act without being explicitly programmed









































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## FROM TEXT GENERATION TO TEST GENERATION

A LESSON LEARNED FROM ALICE IN WONDERLAND



~150,000 Characters Total in the book

47 Distinct Characters When converted to lowercase

**100-Length Subsequence Training** N-Length Subsequence → Character Output

Example (N=5)

 $\begin{array}{l} \mathsf{CHAPT} \to \mathsf{E} \\ \mathsf{HAPTE} \to \mathsf{R} \end{array}$ 

be no mistake about it: it was neither more nor less than a pig, and she felt that it would be quit e aelin that she was a little want oe tolet ano a grtpersent to the tas a little war th tee the tase oa teettee the had been tinhott a little toice at the cadl in a long thiee aedun thet sheer was a little tare gereen to be a gentle of the tabdit scenee the gad onw ie the tay a tirt of toiet at the was a little anonersen, and thin had been woite io a lott of tuen a tile and taede bot her again she cere thth the bene tith the tere bane to tee toaete to tee the harter was a little tire the

same oare cade an anl ano the garee and the was so seat the was a little gareen and the sabdit, and the white rabbit wese tilel an the caoe and the sabbit se teeteer, and the white rabbit wese tilel an the cade in a lonk tfne the sabdi ano aroing to tea the was sf teet whitg the was a little tane oo thete the sabeit she was a little tartig to the tar tf tee the tame of the cagd, and the white rabbit was a little toiee to be anle tite thete ofs and the tabdit was the wiite rabbit, and

herselflying on the bank, with her head in the lap of her sister, who was gently brushing away so siee, and she sabbit said to herself and the sabbit said to herself and the sood way of the was a little that she was a little lad good to the garden, and the sood of the mock turtle said to herself, 'it was a little that the mock turtle said to see it said to sea it said to sea it say it the marge hard sat hn a little that she was so sereated to herself, and she sabbit said to herself, 'it was a little little shated of the sooe of the coomouse it was a little lad good to the little

gooder head. and said to herself, 'it was a little little shated of the mouse of the good of the courte, and it was a little little shated in a little that the was a little little shated of the thmee said to see it was a little book of the was a little that she was so sereated to hare a little the began sitee of the was of the was a little that she was so seally and the sabbit was a little lad good to the little gooder head of the gad seared to see it was a little lad good to the little good











## **AI-DRIVEN TEST GENERATION**

MACHINES LEARNING FROM HUMAN TESTERS

Input Sentence	Predicted Next Word
Observe	Required
Observe Required	Textbox
Observe Required Textbox	FirstName
Observe Required Textbox FirstName	Input
Observe Required Textbox FirstName Try	VALID
Observe Required TextBox FirstName Try VALID FirstName	Invoke
Observe Required TextBox FirstName Try VALID FirstName Click	Submit
Observe Required TextBox FirstName Try VALID FirstName Click Commit	NotObserve
Observe Required Textbox FirstName Try VALID FirstName Click Commit NotObserve	ErrorMessage





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THANK YOU ACKNOWLEDGEMENTS

DIONNY SANTIAGO DAVID ADAMO JUSTIN PHILLIPS PATRICK ALT KEITH BRIGGS NICOLETTE CELLI PETER J. CLARKE JASON ARBON



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