

# Learning with Imperfect Supervision for Language Understanding

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*“Give orange me give eat orange me eat orange give  
me eat orange give me you.”*

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me eat orange give me you.”*

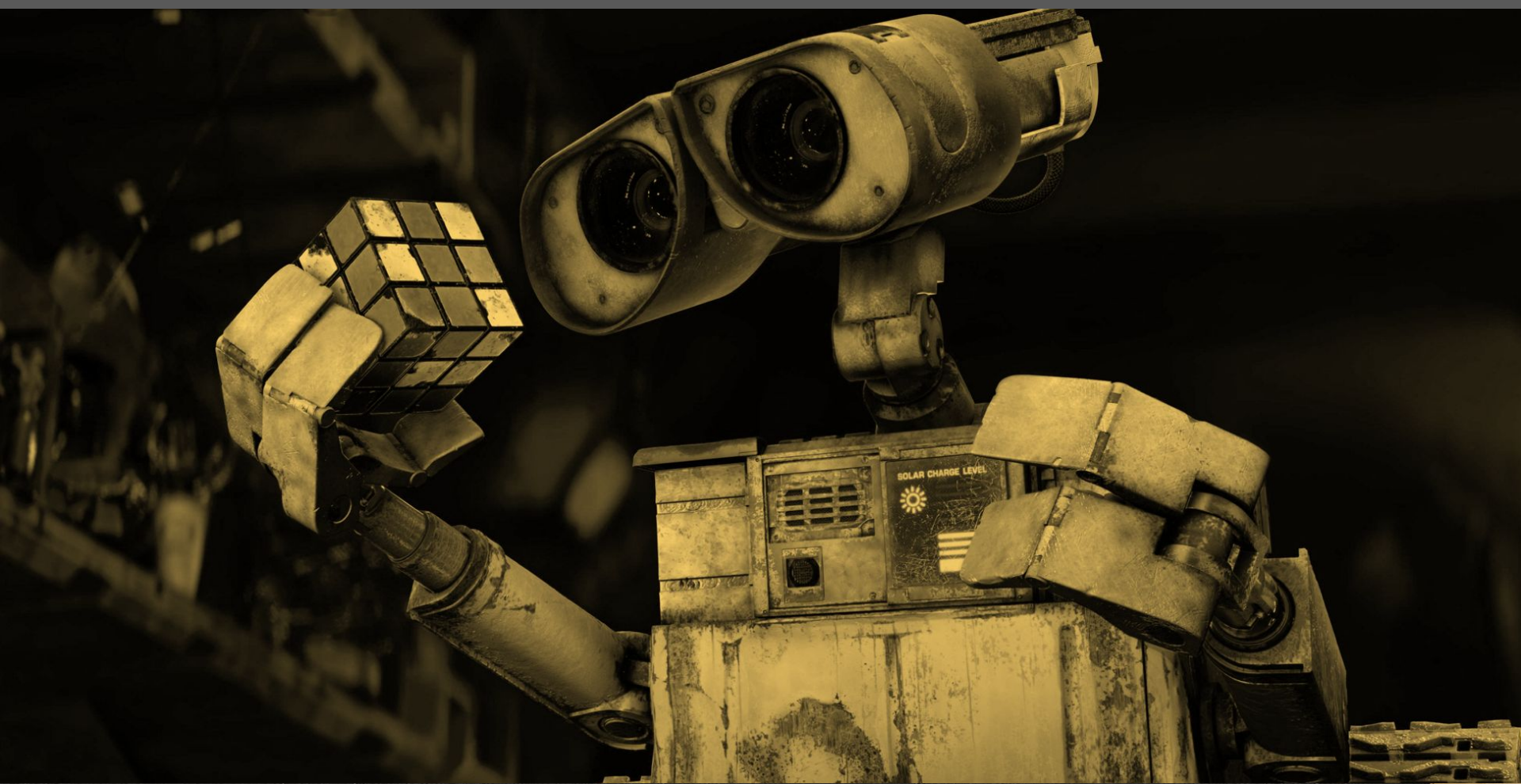
*—Nim Chimpsky*



*Nim Chimpsky (November 19, 1973 – March 10, 2000) was a chimpanzee who was the subject of an extended study of animal language acquisition at Columbia University, led by Herbert S. Terrace, as a challenge to Chomsky's thesis that full-fledged language use was innate only to humans. This quote is the Nim's longest recorded sentence.*

# Poverty of Stimulus





# Imperfect Supervision

# Democratizing AI

# Employing Prior Knowledge

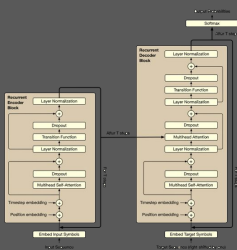


# Augmenting Data and Learning how to Better Learn from Data

# Introducing Inductive Biases into Learning Algorithms

“*Nim chimpsky: "Give orange me ramen noodles and corn for tuesday, okay?". Our old, silly fellow was nothing but a naked imitative animal, expecting everyone to understand the end in view, that which was important to him and his sense of 'I'.*”

—Universal Transformer



Universal Transformer is a neural network model that can be trained to generate the next sequence of words given a prefix. The quote above is generated using a model with 143 million trainable parameters, that is trained on Wikipedia with language modeling objective. To generate the above sentence, the model is fed with the prefix: “Nim chimpsky: “Give orange me”.

Thank you