

What is AI?



Max Welling

University of Amsterdam

Qualcomm Technologies

OVER LEVEN
MET
KUNSTMATIGE
INTELLIGENTIE

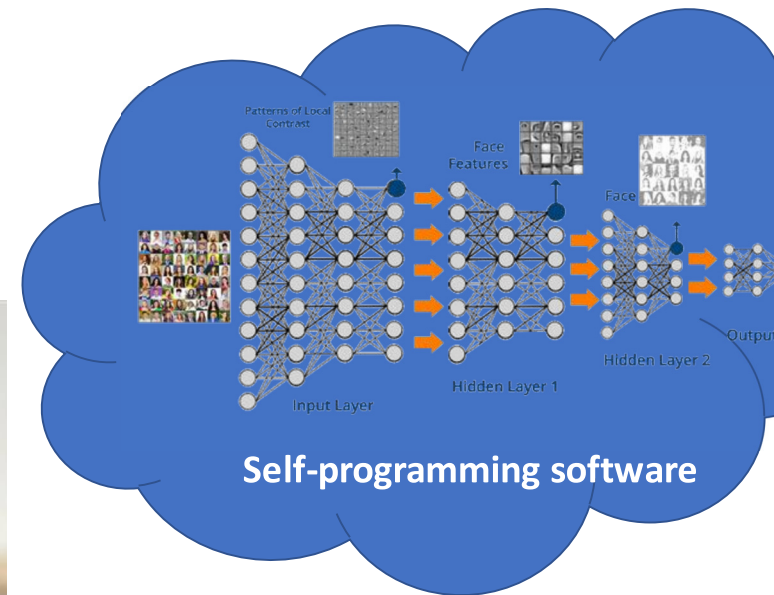
MAX WELLING



Machine Learning as Self-Programming Software

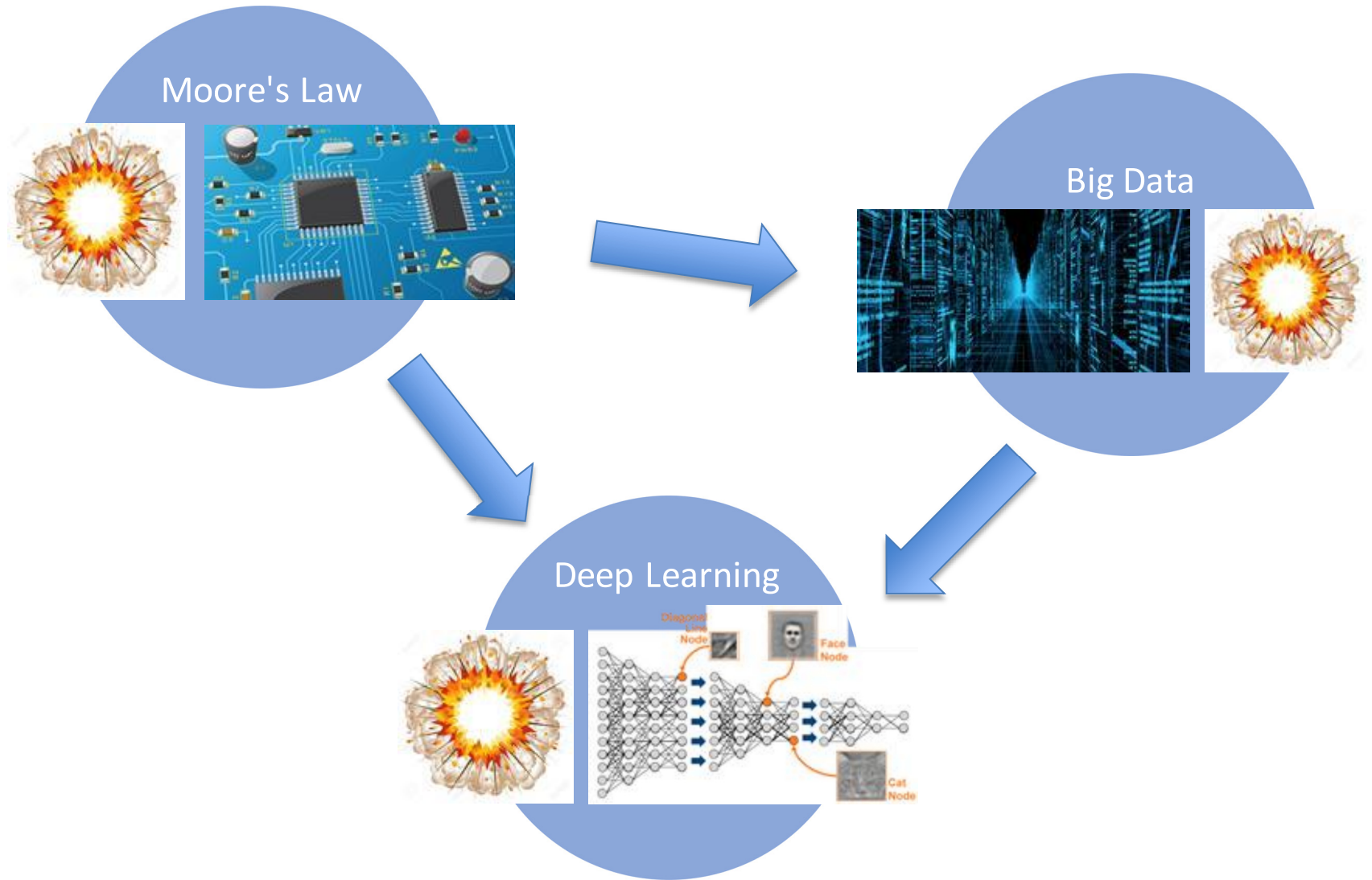
```
43 <body <?php body_content();
44 <div id="fb-root"></div>
45 <script>(function(d, s, id) {
46   var js, fjs = d.getElementsByTagName(s)[0];
47   if (d.getElementById(id)) return;
48   js = d.createElement(s); js.id = id;
49   js.src = "//connect.facebook.net/en_US/sdk.js#xfbml=1&version=v2.6&appId=284856187538668";
50   fjs.parentNode.insertBefore(js, fjs);
51   }(document, 'script', 'facebook-jssdk'));</script>
52 <div id="page" class="site">
53   <div class="skip-link screen-reader-text" href="#content"><?php esc_html_e('Skip to content')></div>
54   <header id="masthead" class="site-header" role="banner">
55     <div class="site-branding">
56       <div class="nav-biten pull-left">
57         <?php if(is_home() && $xpanel['homepage-style'] == 1) { ?>
58           <a href="#" id="openMenu"><?php esc_html_e('Open Menu')></a>
59         <?php } else { ?>
60           <a href="#" id="openMenu2"><?php esc_html_e('Open Menu')></a>
61         <?php } ?>
62       </div>
63       <div class="logo pull-left">
64         <div class="logo pull-left">
65           <a href="#"><?php echo esc_url(home_url()) ?></a>
66         </div>
67       </div>
68       <div class="search-box hidden-xs hidden-sm pull-left ml-10">
69         <?php get_search_form(); ?>
70       </div>
71       <div class="submit-btn hidden-xs hidden-sm pull-left ml-10">
72         <?php get_page_link($xpanel['submit-link']) ?>
73       </div>
74       <div class="user-info pull-right mr-10">
75         <?php
76         if(!is_user_logged_in()) {
```

Traditional software



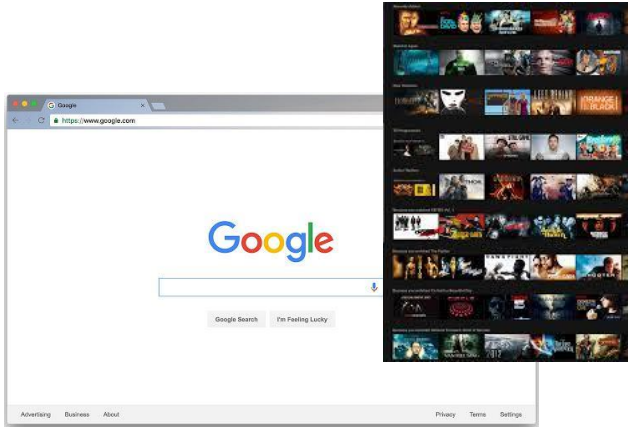
Instead of programming rules, program a method to learn from examples

Explosive Growth in Compute, Data, Models

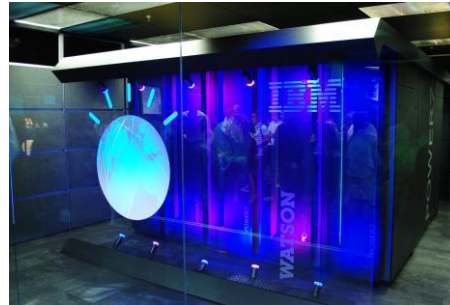


What is AI?

Making machines smart.



Search & recommender systems



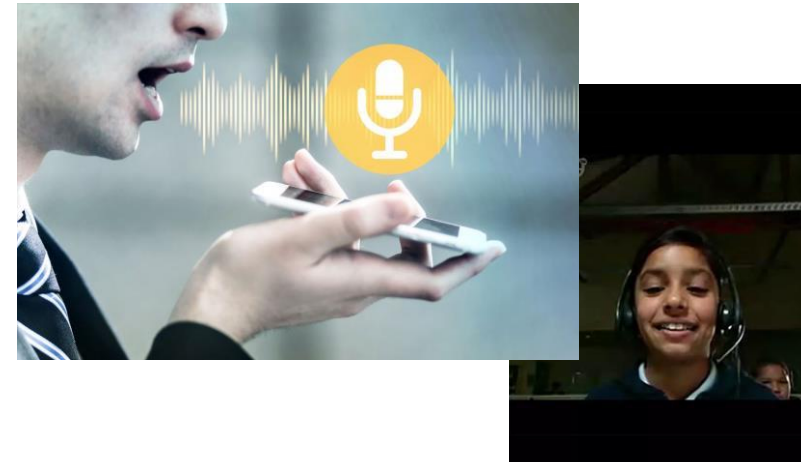
Expert systems



Robotics



Image and video analysis



Speech & language technology

GPT-3

Language Models are Few-Shot Learners

Tom B. Brown*	Benjamin Mann*	Nick Ryder*	Melanie Subbiah*	
Jared Kaplan†	Prafulla Dhariwal	Arvind Neelakantan	Pranav Shyam	Girish Sastry
Amanda Askell	Sandhini Agarwal	Ariel Herbert-Voss	Gretchen Krueger	Tom Henighan
Rewon Child	Aditya Ramesh	Daniel M. Ziegler	Jeffrey Wu	Clemens Winter
Christopher Hesse	Mark Chen	Eric Sigler	Mateusz Litwin	Scott Gray
Benjamin Chess	Jack Clark	Christopher Berner		
Sam McCandlish	Alec Radford	Ilya Sutskever	Dario Amodei	

OpenAI

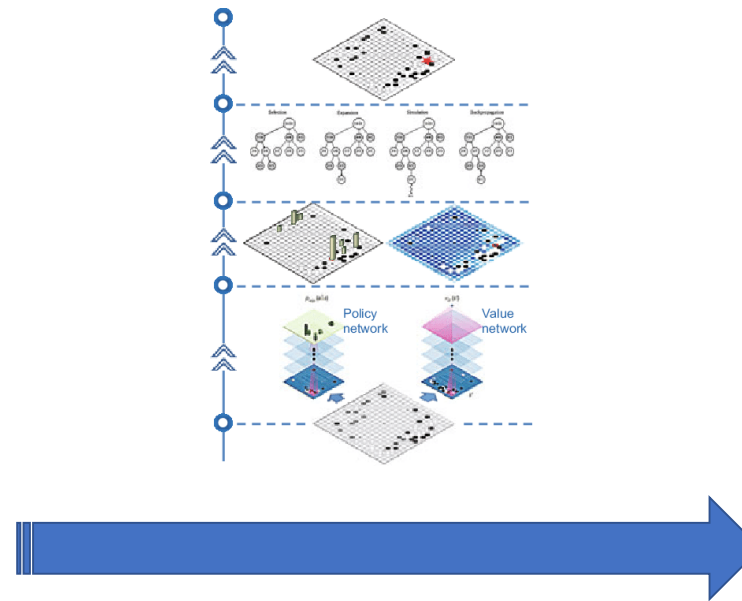
Title: United Methodists Agree to Historic Split

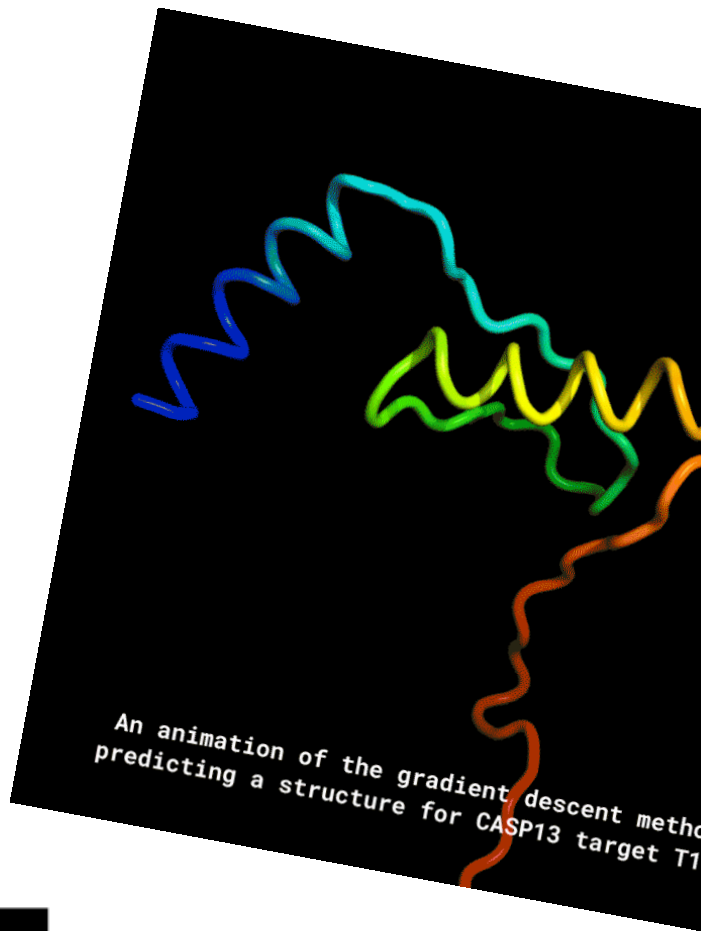
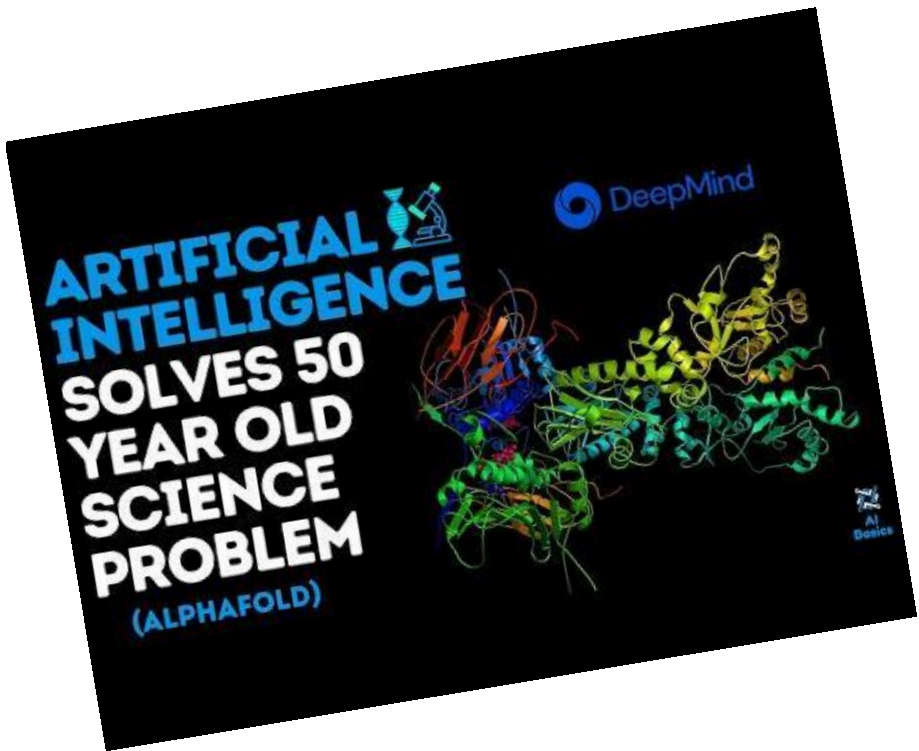
Subtitle: Those who oppose gay marriage will form their own denomination

Article: After two days of intense debate, the United Methodist Church has agreed to a historic split - one that is expected to end in the creation of a new denomination, one that will be "theologically and socially conservative," according to The Washington Post. The majority of delegates attending the church's annual General Conference in May voted to strengthen a ban on the ordination of LGBTQ clergy and to write new rules that will "discipline" clergy who officiate at same-sex weddings. But those who opposed these measures have a new plan: They say they will form a separate denomination by 2020, calling their church the Christian Methodist Episcopal denomination.

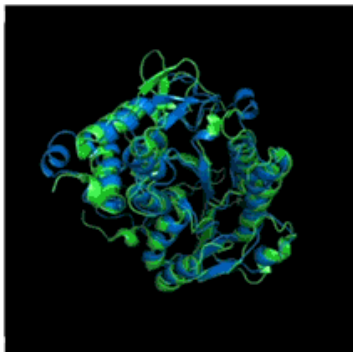
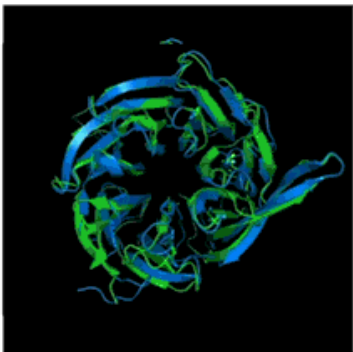
The Post notes that the denomination, which claims 12.5 million members worldwide, was in the early 20th century the "largest Protestant denomination in the United States" but that it has been shrinking in recent decades. The new split will be the second in the church's history. The first occurred in 1968, when roughly 10 percent of the denomination left to form the Evangelical United Brethren Church. The Post notes that the proposed split "comes at a critical time for the church, which has been losing members for years," which has been "pushed toward the brink of a schism over the role of LGBTQ people in the church." Gay marriage is not the only issue that has divided the church. In 2016, the denomination was split over ordination of transgender clergy, with the North Pacific regional conference voting to ban them from serving as clergy, and the South Pacific regional conference voting to allow them.

From AlphaGo to AlphaZero





Structures:
Ground truth (green)
Predicted (blue)



ThisPersonDoesNotExist.com uses generate endless fake faces

Hit refresh to lock eyes with another imaginary stranger

By [James Vincent](#) | Feb 15, 2019, 7:38am EST

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Generative
Adversarial
Networks



A few sample faces — all completely fake — created by ThisPersonDoesNotExist.com

Art

