

Line wrap

```
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2 <html lang="en"><head>
3   <meta charset="utf-8">
4   <meta http-equiv="X-UA-Compatible" content="IE=edge">
5   <meta name="viewport" content="width=device-width, initial-scale=1">
6   <title>Prafulla Dhariwal</title>
7   <meta name="generator" content="Jekyll v3.9.5" />
8   <meta property="og:title" content="Prafulla Dhariwal" />
9   <meta name="author" content="Prafulla Dhariwal" />
10  <meta property="og:locale" content="en_US" />
11  <meta name="description" content="Personal Website and Blog" />
12  <meta property="og:description" content="Personal Website and Blog" />
13  <link rel="canonical" href="https://prafulladhariwal.com/" />
14  <meta property="og:url" content="https://prafulladhariwal.com/" />
15  <meta property="og:site_name" content="Prafulla Dhariwal" />
16  <meta property="og:type" content="website" />
17  <meta name="twitter:card" content="summary" />
18  <meta property="twitter:title" content="Prafulla Dhariwal" />
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21      "@context": "https://schema.org",
22      "@type": "WebSite",
23      "author": {
24        "@type": "Person",
25        "name": "Prafulla Dhariwal",
26        "description": "Personal Website
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28      <link rel="stylesheet" href="/assets/main.css"><link type="application/atom+xml" rel="alternate" href="https://prafulladhariwal.com/feed.>
29    <body><header class="site-header" role="banner">
30      <div class="wrapper"><a class="site-title" id="nav-title" rel="author" href="#">Prafulla Dhariwal</a><nav class="site-nav">
31        <input type="checkbox" id="nav-trigger" class="nav-trigger" />
32        <label for="nav-trigger">
33          <span class="menu-icon">
34            <svg viewbox="0 0 18 15" width="18px" height="15px">
35              <path d="M18,1.484c0,0.82-0.665,1.484-1.484,1.484H1.484C0.665,2.969,0,2.304,0,1.484l0,0C0,0.665,0.665,0,1.484,0 h15.032C17.335,0,18,0.665,
36            </svg>
37          </span>
38        </label>
39        <div class="trigger">
40          <a class="page-link" href="#Publications" onclick="document.getElementById('nav-trigger').checked = false;">Publications</a>
41          <a class="page-link" href="#Media" onclick="document.getElementById('nav-trigger').checked = false;">Media</a>
42        </div>
43      </nav></div>
44    </header>
45    <main class="page-content" aria-label="Content">
46      <div class="wrapper">
47        <div class="home"><div style="text-align: center">
48          <p><img alt="Prafulla Dhariwal" /></p>
49          <div style="padding-bottom: 15px"><a class="u-email" href="mailto:prafulla.dhariwal@gmail.com"><svg alt="Email icon" /> prafulla.dhariwal@gmail.com</a></div>
50          <p>I'm a research scientist at <a href="https://openai.com">OpenAI</a> working on generative models and unsupervised learning. Previously,
51          </div>
52          <div id="Publications" class="sections"></div>
53          <div style="text-align: center">
54            <h1 id="publications">Publications</h1>
55          </div>
56          <h2 id="generative-models">Generative Models</h2>
57          <table class="publications-table"><tr>
58            <td class="publications-cover">
59              <img alt="Improved techniques for training consistency models" />
60            </td>
61            <td>
62              <p><strong><a href="https://arxiv.org/abs/2310.14189">Improved techniques for training consistency models</a></strong><br>
63              <span class="publications-content">
64                <a href="https://arxiv.org/abs/2310.14189">[Paper]</a><br>
65                Yang Song, <strong>Prafulla Dhariwal</strong>
66              </span></p>
67            </td>
68          </tr></table>
69          <table class="publications-table"><tr>
70            <td class="publications-cover">
71              <img alt="DALL·E 3: Improving image generation with better captions" />
72            </td>
73            <td>
74              <p><strong><a href="https://openai.com/dall-e-3">DALL·E 3: Improving image generation with better captions</a></strong><br>
75              <span class="publications-content">
76                <a href="https://cdn.openai.com/papers/dall-e-3.pdf">[Paper]</a> <a href="https://openai.com/dall-e-3">[Blog]</a><br>
77                James Betker*, Gabriel Goh*, Li Jing*, Tim Brooks, Jianfeng Wang, Linjie Li, Long Ouyang, Juntang Zhuang, Joyce Lee, Yufei Guo, Wesam Manj
78              </span></p>
79            </td>
80          </tr></table>
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82            <td class="publications-cover">
83              <img alt="Consistency Models" />
84            </td>
85            <td>
86              <p><strong><a href="https://arxiv.org/abs/2303.01469">Consistency Models</a></strong><br>
87              <span class="publications-content">
88                <a href="https://arxiv.org/abs/2303.01469">[Paper]</a> <a href="https://github.com/openai/consistency_models">[Code]</a><br>
89                Yang Song, <strong>Prafulla Dhariwal</strong>, Mark Chen, Ilya Sutskever
90              </span></p>
91            </td>
92          </tr></table>
93          <table class="publications-table"><tr>
94            <td class="publications-cover">
95              <img alt="Point·E: A System for Generating 3D Point Clouds from Complex Prompts" />
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97            <td>
98              <p><strong><a href="https://arxiv.org/abs/2212.08751">Point·E: A System for Generating 3D Point Clouds from Complex Prompts</a></strong><br>
99              <span class="publications-content">
100                <a href="https://arxiv.org/abs/2212.08751">[Paper]</a> <a href="https://github.com/openai/point-e">[Code]</a><br>
101                Alex Nichol*, Heewoo Jun*, <strong>Prafulla Dhariwal</strong>, Pamela Mishkin, Mark Chen
102              </span></p>
103            </td>
104          </tr></table>
105        </div>
106      </div>
107    </main>
108  </body>
109 </html>
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100 <td class="publications-cover">
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104 <p><strong><a href="https://openai.com/dall-e-2/">DALL·E 2: Hierarchical Text-Conditional Image Generation with CLIP Latents</a></strong><
105 <span class="publications-content">
106 <a href="https://arxiv.org/abs/2204.06125">[Paper]</a> <a href="https://openai.com/dall-e-2/">[Blog]</a><br/>
107 Aditya Ramesh*, <strong>Prafulla Dhariwal*</strong>, Alex Nichol*, Casey Chu*, Mark Chen
108 </span></p>
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112 <td class="publications-cover">
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116 <p><strong><a href="https://arxiv.org/abs/2112.10741">GLIDE: Towards Photorealistic Image Generation and Editing with Text-Guided Diffusion</a></strong><
117 <span class="publications-content">
118 <a href="https://arxiv.org/abs/2112.10741">[Paper]</a> <a href="https://github.com/openai/glide-text2im">[Code]</a><br/>
119 Alex Nichol*, <strong>Prafulla Dhariwal*</strong>, Aditya Ramesh*, Pranav Shyam, Pamela Mishkin, Bob McGrew, Ilya Sutskever, Mark Chen
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126 <source src="/assets/videos/publications/diffusion-beats-gans.mp4" type="video/mp4" />
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130 <p><strong><a href="https://arxiv.org/abs/2105.05233">Diffusion Models Beat GANs on Image Synthesis</a></strong><br/>
131 <span class="publications-content">
132 <a href="https://arxiv.org/abs/2105.05233">[Paper]</a> <a href="https://github.com/openai/guided-diffusion">[Code]</a><br/>
133 <strong>Prafulla Dhariwal*</strong>, Alex Nichol*<br/>
134 <em>Neural Information Processing Systems (NeurIPS), 2021</em>
135 </span></p>
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143 <p><strong><a href="https://arxiv.org/abs/2102.09672">Improved Denoising Diffusion Probabilistic Models</a></strong><br/>
144 <span class="publications-content">
145 <a href="https://arxiv.org/abs/2102.09672">[Paper]</a> <a href="https://github.com/openai/improved-diffusion">[Code]</a><br/>
146 Alex Nichol*, <strong>Prafulla Dhariwal*</strong><br/>
147 <em>International Conference on Machine Learning (ICML), 2021</em>
148 </span></p>
149 </td>
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151 <table class="publications-table"><tr>
152 <td class="publications-cover">
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156 <p><strong><a href="https://openai.com/blog/jukebox/">Jukebox: A Generative Model for Music</a></strong><br/>
157 <span class="publications-content">
158 <a href="https://arxiv.org/abs/2005.00341">[Paper]</a> <a href="https://github.com/openai/jukebox">[Code]</a> <a href="https://openai.com/blog/jukebox/">[Blog]</a><br/>
159 <strong>Prafulla Dhariwal*</strong>, Heewoo Jun*, Christine Payne*, Jong Wook Kim, Alec Radford, Ilya Sutskever
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170 <p><strong><a href="https://openai.com/blog/glow">Glow: Generative Flow with Invertible 1x1 Convolutions</a></strong><br/>
171 <span class="publications-content">
172 <a href="https://arxiv.org/abs/1807.03039">[Paper]</a> <a href="https://github.com/openai/glow">[Code]</a> <a href="https://openai.com/blog/glow/">[Blog]</a><br/>
173 Durk P. Kingma*, <strong>Prafulla Dhariwal*</strong><br/>
174 <em>Neural Information Processing Systems (NeurIPS), 2018</em>
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183 <p><strong><a href="https://arxiv.org/abs/1611.02731">Variational Lossy Autoencoder</a></strong><br/>
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185 <a href="https://arxiv.org/abs/1611.02731">[Paper]</a><br/>
186 Xi Chen, Diederik P. Kingma, Tim Salimans, Yan Duan, <strong>Prafulla Dhariwal*</strong>, John Schulman, Ilya Sutskever, Pieter Abbeel <br/>
187 <em>International Conference on Learning Representations (ICLR), 2017</em>
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199 <p><strong><a href="https://arxiv.org/abs/2005.14165">Language Models are Few-Shot Learners</a></strong><br/>
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201 <a href="https://arxiv.org/abs/2005.14165">[Paper]</a> <a href="https://openai.com/blog/openai-api/">[Code]</a><br/>
202 Tom B Brown*, Benjamin Mann*, Nick Ryder*, Melanie Subbiah*, Jared Kaplan, <strong>Prafulla Dhariwal</strong>, Arvind Neelakantan, Pranav
203 <em>Neural Information Processing Systems (NeurIPS), 2020</em>
204 </span></p>
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214 <p><strong><a href="https://openai.com/blog/image-gpt/">Generative Pretraining from Pixels</a></strong>
215 <span class="publications-content"><br/>
216 <a href="https://cdn.openai.com/papers/Generative Pretraining from Pixels V2.pdf">[Paper]</a> <a href="https://github.com/openai/image-gp
217 Mark Chen, Alec Radford, Rewon Child, Jeff Wu, Heewoo Jun, <strong>Prafulla Dhariwal</strong>, David Luan, Ilya Sutskever<br/>
218 <em>International Conference on Machine Learning (ICML), 2020</em>
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222 <h2 id="scaling-laws">Scaling Laws</h2>
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228 <p><strong><a href="https://arxiv.org/abs/2010.14701">Scaling Laws for Autoregressive Generative Modeling</a></strong>
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230 <a href="https://arxiv.org/abs/2010.14701">[Paper]</a><br/>
231 Tom Henighan*, Jared Kaplan*, Mor Katz*, Mark Chen, Christopher Hesse, Jacob Jackson, Heewoo Jun, Tom B Brown, <strong>Prafulla Dhariwal</strong>,
232 </span></p>
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235 <h2 id="theorem-proving">Theorem Proving</h2>
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241 <p><strong><a href="https://arxiv.org/abs/1806.00608">Gamepad: A Learning Environment for Theorem Proving</a></strong>
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243 <a href="https://arxiv.org/abs/1806.00608">[Paper]</a> <a href="https://github.com/ml4tp/gamepad">[Code]</a><br/>
244 Daniel Huang*, <strong>Prafulla Dhariwal</strong>, Dawn Song, Ilya Sutskever<br/>
245 <em>International Conference on Learning Representations (ICLR), 2019</em>
246 </span></p>
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257 <p><strong><a href="https://openai.com/blog/openai-baselines-ppo/">Proximal Policy Optimization Algorithms</a></strong>
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259 <a href="https://arxiv.org/abs/1707.06347">[Paper]</a> <a href="https://github.com/openai/baselines">[Code]</a> <a href="https://openai.c
260 John Schulman, Filip Wolski, <strong>Prafulla Dhariwal</strong>, Alec Radford, Oleg Klimov
261 </span></p>
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267 <source src="/assets/videos/publications/exploration.mp4" type="video/mp4" />
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271 <p><strong><a href="https://openai.com/blog/better-exploration-with-parameter-noise/">Parameter Space Noise for Exploration</a></strong><br/>
272 <span class="publications-content">
273 <a href="https://arxiv.org/abs/1706.01905">[Paper]</a> <a href="https://github.com/openai/baselines">[Code]</a> <a href="https://openai.c
274 Matthias Plappert, Rein Houthoofd, <strong>Prafulla Dhariwal</strong>, Szymon Sidor, Richard Y Chen, Xi Chen, Tamim Asfour, Pieter Abbeel,
275 <em>International Conference on Learning Representations (ICLR), 2018</em>
276 </span></p>
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285 <span class="publications-content">
286 <a href="https://github.com/openai/baselines">[Code]</a><br/>
287 <strong>Prafulla Dhariwal</strong>, Christopher Hesse, Oleg Klimov, Alex Nichol, Matthias Plappert, Alec Radford, John Schulman, Szymon Si
288 </span></p>
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291 <h2 id="quantum-complexity">Quantum Complexity</h2>
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view-source:<https://prafulladhariwal.com/#Publications>

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391 <div class="iframe-responsive" style="height: 140px; padding-bottom: 0;"><a href="https://www.technologyreview.com/2020/07/20/1005454/or
392 </div>
393 <script async src="//cdn.iframe.ly/embed.js" charset="utf-8"></script>
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395 </div></div>
396 <div style="margin-bottom: 30px;"><h2>Jukebox</h2>
397 <div class="media-scroll">
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400 <div class="iframe-embed">
401 <div class="iframe-responsive" style="height: 140px; padding-bottom: 0;"><a href="https://www.theverge.com/2020/4/30/21243038/openai-ju
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405 <div onclick="window.open('https://techcrunch.com/2020/04/30/openais-new-experiments-in-music-generation-create-an-uncanny-valley-elvis/',
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420 </div>
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423 <div onclick="window.open('https://www.businessinsider.com/jukebox-ai-music-generator-realistic-songs-machine-learning-algorithm-deepfakes
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449 <div class="footer-home">
450 <div class="footer-div">Built using <a href="https://github.com/jsanz/gh-pages-minima-starter">minima</a></div>
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