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 UAB "PLANNER5D"

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 10 UNITED STATES DISTRICT COURT  
 11 NORTHERN DISTRICT OF CALIFORNIA  
 12

13 UAB "PLANNER5D" dba PLANNER 5D,  
 14

15 Plaintiff,

16 v.

17 FACEBOOK INC.,  
 18 FACEBOOK TECHNOLOGIES, LLC, THE  
 19 TRUSTEES OF PRINCETON  
 20 UNIVERSITY, DOES 1-200, ABC  
 21 CORPORATIONS 1-20, and XYZ  
 UNIVERSITIES 1-20.

22 Defendants.  
 23  
 24  
 25

Case No. 3:19-cv-03132-WHO

**FIRST AMENDED COMPLAINT FOR**

1. MISAPPROPRIATION OF INDIVIDUAL TRADE SECRETS (DTSA);
2. MISAPPROPRIATION OF COMPILATION TRADE SECRETS (DTSA);
3. MISAPPROPRIATION OF INDIVIDUAL TRADE SECRETS (CUTSA); &
4. MISAPPROPRIATION OF COMPILATION TRADE SECRETS (CUTSA)

**DEMAND FOR JURY TRIAL**

1 UAB “Planner5D” (Planner 5D) hereby submits its First Amended Complaint  
2 (FAC) against Facebook, Inc., Facebook Technologies, LLC (together, Facebook), and  
3 The Trustees of Princeton University (Princeton or Princeton University) as follows.

4 **INTRODUCTION**

5 1. Computer vision—the ability of machines to recognize three-  
6 dimensional scenes—is one of today’s leading research fields. Whoever first masters  
7 this technology will forever change humankind’s relationship with machines.

8 2. Scene-recognition technology will soon enable robots to care for home-  
9 bound patients, and to boost safety and productivity at offices, airports, hospitals,  
10 and factories. It will also revolutionize an array of applications outside of robotics.  
11 One product looks after elderly people in their homes, using computer vision to  
12 detect changes in their gait or behavior, and to recognize stumbles or falls. Other  
13 applications will usher in a new era in virtual reality. Virtual objects will be  
14 seamlessly integrated into the user’s actual indoor environment, enhancing realism  
15 for both industrial and recreational applications. Shipping giant DHL has already  
16 equipped its warehouse employees with “smart glasses” that use scene recognition  
17 to display where each item picked from the warehouse should be placed on the  
18 trolley for delivery. It’s been estimated that the computer vision market will reach  
19 \$48 billion by 2023, and \$60 billion by 2025.

20 3. Yet even as scientists make great strides in this burgeoning research  
21 area, they have encountered a roadblock. Teaching machines to recognize three-  
22 dimensional settings requires feeding them large volumes of realistic, digitized  
23 renderings of such places—digitized doors, walls, furniture, and the like, arranged  
24 into plausible interiors and rendered in three dimensions. Creating lifelike digital  
25 scenes is extremely time- and labor-intensive. For truly realistic scenes, human  
26 modelers must personally craft each three-dimensional object, and human designers  
27 must arrange the objects in lifelike configurations. Large collections of these kinds of  
28 three-dimensional settings are thus exceedingly rare.

1           4.       Yet such collections are vital to scene-recognition research. In a slide  
2 presentation posted online, a senior Princeton computer scientist asked, “What is the  
3 main roadblock for 3D scene understanding and research?” His answer: “Data!!” (See  
4 Thomas Funkhouser, *3D Data for Data-Driven Scene Understanding*, 8-9,  
5 <https://www.cs.princeton.edu/~funk/VRWorkshop.pdf> (last visited June 4, 2019).)

6           5.       Planner 5D owns a collection of over a million hand-crafted, digitized,  
7 and realistic three-dimensional objects and scenes, depicting a wide variety of  
8 household and office designs. To Planner 5D’s knowledge, no other collection in the  
9 world numbers even in the tens of thousands. The company created and grew its  
10 collection over many years, at a cost of millions of dollars. It began by creating  
11 several thousand hand-crafted three-dimensional objects. These were lifelike  
12 renderings of furniture, appliances, plants, people, lighting, or other objects that  
13 could occupy the interior or immediate exterior of a structure. The company then  
14 carefully selected scenes made from arrangements of its individual objects to  
15 showcase in a gallery. Over many years, its collection of human-created scenes grew  
16 from tens of thousands, to hundreds of thousands, to over a million.

17           6.       Computer scientists at Princeton were eager to use this uniquely large,  
18 uniquely realistic collection of data. They decided to download the entirety of  
19 Planner 5D’s then-existing data collection. Planner 5D will need discovery to  
20 determine the precise means by which Princeton did so. But on information and  
21 belief, they or others acting at their behest used special software tools, including  
22 Princeton’s own specially-engineered software, to access the digital files underlying  
23 Planner 5D’s objects and scenes. Without these special tools, users could only see and  
24 manipulate on-screen images rendered from these data files. For example, users  
25 could see an image of a sofa, and drag and position it onto a floor plan for a living  
26 room. But the underlying data files from which these images were rendered were  
27 always invisible, and wholly inaccessible, to users.

28

1           7.       On information and belief, using software developer tools, Princeton or  
2 its agents monitored and intercepted communications activity between Planner 5D's  
3 software and its European servers. Using information extracted from these  
4 intercepted communications, together with data-harvesting software of its own  
5 creation, Princeton determined the secret Internet addresses where the tens of  
6 thousands of Planner 5D's object and scene files were hidden. Princeton's computer  
7 code then crawled the location of each of the tens of thousands of addresses, scraping  
8 the files it encountered into its unauthorized collection.

9           8.       In this way, Princeton downloaded over five *gigabytes* of Planner 5D  
10 data. It then used this data for its scene-recognition activities. Princeton researchers  
11 published multiple articles using the data. The authors confessed the data's  
12 provenance: "We use a collection of 3D scene models downloaded from the  
13 Planner5D website." (E.g., Yinda Zhang, *et al*, *Physically-Based Rendering for Indoor*  
14 *Scene Understanding Using Convolutional Neural Networks 3* (Proceedings of IEEE  
15 Conference on Computer Vision and Pattern Recognition, 2017)  
16 <https://arxiv.org/pdf/1612.07429v2.pdf>.) (last visited June 4, 2019).)

17           9.       Princeton also made the stolen data available to researchers at a  
18 Princeton URL. Visitors to this URL would fill out a form and agree to certain terms  
19 in order to be approved for access to the dataset. Planner 5D will need discovery to  
20 determine exactly how many researchers applied to Princeton for access to the data,  
21 how many were accepted, who those researchers are, and whether and how their use  
22 of the data was restricted. Princeton labeled the stolen data the "SUNCG dataset."

23           10.      Also interested in Planner 5D's objects and scenes were defendants  
24 Facebook, Inc. and its subsidiary, Facebook Technologies, LLC (together, Facebook).  
25 Facebook Technologies runs "Oculus," the well-known virtual-reality brand  
26 Facebook acquired in 2014. Scene recognition is a vital component of virtual-reality  
27 products and services. As one example, "scene fusion" — the fusing of virtual objects  
28

1 with the user’s actual surroundings—relies critically on scene-recognition  
2 technology.

3 11. Eager to tap the enormous commercial potential of scene recognition  
4 technology, Facebook assembled its own, internal, computer-vision team. This team  
5 then enlisted broader aid in its research.

6 12. Facebook joined with researchers at Princeton, Stanford, UC Berkeley,  
7 Georgia Tech, and other institutions to jointly organize and run an international  
8 scene-recognition competition called the SUMO Challenge (Scene Understanding  
9 and MOdeling Challenge). The lead sponsor of the SUMO Challenge was Facebook.

10 (See THE 2019 SCENE UNDERSTANDING AND MODELING CHALLENGE,

11 <https://sumochallenge.org/> (last visited June 4, 2019).)

12 13. SUMO Challenge entrants were encouraged to submit scene-  
13 recognition papers and algorithms. The SUMO Challenge organizers promised  
14 contest winners cash prizes and a speaking slot at a “SUMO Challenge conference.”  
15 This year’s conference took place in June in Long Beach, California. To facilitate  
16 contestants’ work, Facebook and the other SUMO Challenge organizers created their  
17 own copy of the SUNCG dataset, and made it available to contestants who signed up  
18 for the contest to use for their submissions. These SUMO Challenge organizers  
19 published a link to the copied SUNCG dataset, at a URL belonging to Stanford  
20 University—itself a SUMO Challenge organizer. In return for their chance at cash  
21 prizes and the opportunity to present their winning submissions, SUMO contestants  
22 granted Facebook a “perpetual, royalty-free, no-cost license and right to use and  
23 otherwise exploit” the submitted materials, including Facebook’s right to use the  
24 contest submissions “in any merchandising, advertising, marketing, promotion or for  
25 any other commercial or non-commercial purpose.” Planner 5D will need discovery  
26 to determine how many contestants applied to the SUMO Challenge for access to the  
27 SUNCG dataset, how many were accepted, who those contestants were, and how, if  
28 at all, their use of the data was restricted. But on information and belief, enough

1 contestants were given access to the dataset to cause Planner 5D enormous economic  
2 damage.

3 14. The gigabytes of data Princeton, Facebook, and an unknown number of  
4 others have downloaded and used are the intellectual property of Planner 5D.  
5 Planner 5D's data was scraped, copied, and used without its knowledge or  
6 permission. Defendants' copying, use, and public disclosure and dissemination of  
7 Planner 5D's core asset has caused catastrophic and potentially permanent damage  
8 to the company.

### 9 JURISDICTION

10 15. This case arises under the Defend Trade Secrets Act (DTSA), 18 U.S.C.  
11 § 1836 *et seq.*, and the California Uniform Trade Secrets Act (CUTSA), Cal. Civ.  
12 Code § 3426 *et seq.* Accordingly, this Court has subject matter jurisdiction under 28  
13 U.S.C. § 1331 (DTSA claim), 28 U.S.C. § 1836(c) (DTSA claim), and 28 U.S.C. § 1367(a)  
14 (supplemental jurisdiction over CUTSA claim).

15 16. The Court has personal jurisdiction over Facebook, Inc. and Facebook  
16 Technologies, LLC because each is headquartered in California.

17 17. The Court has personal jurisdiction over Princeton University because,  
18 on information and belief, Princeton, together with its current and former employees  
19 and students has engaged in the following acts:

- 20 • participated in and assisted with the SUMO Challenge in California,  
21 including as SUMO Challenge organizers and advisors;
- 22 • worked with Facebook and other California-based companies,  
23 individuals, and institutions involved with the SUMO Challenge;
- 24 • received "generous support"—presumably cash funding—for scene  
25 recognition work from Silicon Valley companies such as Facebook, Inc.,  
26 Google LLC, and Nvidia Corporation.
- 27 • permitted the copying and storage in this district of the SUNCG dataset  
28 used in the SUMO Challenge;

- 1 • made its own copy of the SUNCG dataset generally available for
- 2 download in California, an invitation that on information and belief at
- 3 least some California residents accepted;
- 4 • co-authored articles with California residents about the SUNCG
- 5 dataset, and specifically its origin as data downloaded from
- 6 Planner 5D;
- 7 • consented to and enabled the current sabbatical here, at Google and
- 8 Stanford, of Dr. Thomas Funkhouser, one of Princeton’s leading
- 9 computer-vision professors. Dr. Funkhouser co-authored articles
- 10 dealing with Princeton’s use of the Planner 5D data and serves as one
- 11 of four members of the SUMO Challenge Advisory Board; and
- 12 • accepted Facebook’s support of another of its key scene-understanding
- 13 researchers, Dr. Shuran Song, via a “Facebook Fellowship.”

14 18. The Court also has personal jurisdiction over all defendants because no  
15 defendant timely challenged personal jurisdiction under Federal Rule of Civil  
16 Procedure 12 in response to the original Complaint, and all defendants have  
17 accordingly waived such a challenge. Fed. R. Civ. P. 12(h)(1).

18 **VENUE**

19 19. Venue is proper in this district under 28 U.S.C. § 1391(b), because a  
20 substantial part of the events giving rise to the claim occurred here, and because all  
21 defendants are subject to the Court’s personal jurisdiction here. Venue is also proper  
22 under 28 U.S.C. § 1400(a), because the defendants and their agents either reside or  
23 can be found in this district.

24 20. Venue is also proper in this district because no defendant challenged  
25 venue under Federal Rule of Civil Procedure 12 in response to the original  
26 Complaint, and all defendants have accordingly waived such a challenge. Fed. R.  
27 Civ. P. 12(h)(1).

28

1 **INTRADISTRICT ASSIGNMENT**

2 21. This is an intellectual property action subject to assignment on a  
3 district-wide basis, and has been assigned to the San Francisco Division. N.D. Cal.  
4 Civ. Local Rule 3-2(c).

5 **PARTIES**

6 22. Planner 5D is a private limited liability company organized under the  
7 laws of the Republic of Lithuania.

8 23. Facebook, Inc. is a Delaware corporation with headquarters in Menlo  
9 Park, California.

10 24. Facebook Technologies, LLC is a Delaware limited liability company  
11 headquartered in California. It is a subsidiary of Facebook, Inc.

12 25. The Trustees of Princeton University is a non-profit educational  
13 corporation and academic institution in New Jersey. In this First Amended  
14 Complaint, "Princeton" refers to the university, its employees, agents, and others  
15 acting at its behest and direction.

16 26. Does 1-200 are individuals whose names and identities Planner 5D does  
17 not presently know, but who, on information and belief, committed or facilitated the  
18 trade secret misappropriation and other acts or omissions alleged here. Planner 5D  
19 will add the names and identities of these Doe defendants when it learns them.

20 27. ABC Corporations 1-20 are business entities or unincorporated  
21 associations, whose names, states of organization or incorporation, and entity types  
22 Planner 5D does not presently know, but which, on information and belief,  
23 committed or facilitated the trade secret misappropriation and other acts or  
24 omissions alleged here. Planner 5D will add the names and identities of these  
25 business entities or unincorporated associations when it learns them.

26 28. XYZ Universities 1-20 are academic institutions whose identities, or  
27 whose exact role in the events alleged here, Planner 5D does not presently know. On  
28 information and belief, some of these academic institutions committed or facilitated



1 the trade secret misappropriation and other acts or omissions alleged here.

2 Planner 5D will add the names, identities, and roles of these academic institutions  
3 when it learns them.

4 29. On information and belief, in committing the acts or omissions alleged  
5 in this First Amended Complaint, each defendant conspired with, aided and abetted,  
6 or acted in concert with each other, and each acted as the agent of each other. Under  
7 principles of *respondeat superior* and like principles, employer defendants are liable  
8 for the acts and omissions of their employees and agents.

### 9 GENERAL ALLEGATIONS

#### 10 A. Planner 5D and Its Object and Scene Files

11 30. Planner 5D was founded in 2011 as a user-friendly home design tool  
12 that allowed anyone to quickly and easily create their own home, office, or landscape  
13 designs. Website visitors select from thousands of available objects, from structural  
14 features (such as windows, arches, doors, and stairs), to furniture (such as sofas,  
15 beds, tables, chairs, and rugs), to kitchen and bathroom appurtenances (such as baths  
16 and sinks), to electrical appliances (such as lights, video equipment, and computers),  
17 to exterior features (such as paths, lawns, trees, plants, barbeques, and swimming  
18 pools). To create a design, users simply drag any of these objects onto or around a  
19 chosen floor plan. Once added to a design, these objects can be quickly and easily  
20 moved, rotated, tilted, re-sized, or otherwise manipulated to create the desired  
21 design. Users can easily toggle between two- and three-dimensional renderings of  
22 the design. In 3D, a design can easily be rotated and tilted to any desired perspective.

23 31. In the years since its founding, Planner 5D has become a leader in web-  
24 based interior design tools. It currently has over 40 million users worldwide.

#### 25 1. Planner 5D's Object Files

26 32. Planner 5D created its collection of realistic, digitized objects over a  
27 span of more than seven years, at a cost of millions of dollars. Planner 5D continues  
28 to add to this collection. At the time Princeton scraped Planner 5D's object data, it

1 scraped Planner 5D's entire then-existing collection, which numbered over 2,600 data  
2 files of objects. Currently, Planner 5D owns a collection of over 4,500 individual  
3 object files.

4         33. Each of Planner 5D's object files was located at a unique, and secret,  
5 Internet address on Planner 5D's servers. These addresses are never shown to  
6 Planner 5D's users. Rather, users see only pictures of home-design objects that can be  
7 selected for inclusion in a floor plan. When a user clicks on and drags a picture of a  
8 desired object, Planner 5D's proprietary software will, operating in the background  
9 and invisibly to the user, fetch the corresponding data file from a secret Internet  
10 address. Identifying the secret address of the object, or accessing the underlying data  
11 file stored there, is impossible without circumventing Planner 5D's software and  
12 penetrating non-public addresses on its servers. Circumvention of these protections  
13 requires, first, using software developer tools to monitor and intercept  
14 communications activity between Planner 5D's software and its European servers.  
15 Combining key information gleaned from these intercepted communications with  
16 specially-designed data-harvesting software, a hacker could determine the secret  
17 Internet address of each object file, and the full catalog of object files could be  
18 crawled and scraped.

19         34. Without tools and techniques of this kind, users of Planner 5D's  
20 website could not and cannot access the location or the content of even one of  
21 Planner 5D's over-2,600 object files.

22         35. Each of Planner 5D's over-2,600 object files is individually a trade secret  
23 belonging to Planner 5D. Separately, the *compilation* of over-2,600 object data files  
24 itself constitutes a trade secret belonging to Planner 5D.

## 25                 2. Planner 5D's Scene Files

26         36. In addition to these over-2,600 object files, Planner 5D also owns a  
27 much larger set of data files that define floor plans, or "scenes." These scene files  
28 store configurations, or arrangements, of individual objects, that have been

1 superimposed on a floor plan. Planner 5D's website includes a large gallery of pre-  
2 existing scenes (floorplans) that have been carefully selected to showcase the  
3 program's capabilities, and to provide templates for users who don't want to start  
4 their floor plans from scratch. As with Planner 5D's object files, each scene file in this  
5 gallery was individually created by a human designer. When Princeton scraped  
6 Planner 5D's files, the company's scene gallery numbered over 45,000 scenes.  
7 Princeton scraped each and every one of the Planner 5D scene files then located in  
8 the company's gallery.

9         37. As with the data files defining objects, those defining scenes are each  
10 kept at a unique, and secret, Internet address on Planner 5D's servers. Neither these  
11 datafiles nor their secret Internet addresses are ever shown to Planner 5D's users.  
12 Rather, users see only pictures of pre-existing scenes, or floor plans, that they can  
13 build on to personalize their interior design. When a user clicks on a desired picture  
14 of a scene, Planner 5D's proprietary software will, operating in the background and  
15 invisibly to the user, fetch the data file for that scene from the secret Internet address  
16 at which it is stored. The software then renders the data file into a scene that is visible  
17 the user's screen. Identifying the secret address of the scene, or accessing the  
18 underlying data file stored there, is impossible without circumventing Planner 5D's  
19 software and penetrating non-public addresses on its servers. Circumvention of these  
20 protections requires, first, using software developer tools to monitor and intercept  
21 communications activity between Planner 5D's software and its European servers.  
22 Combining key information gleaned from these intercepted communications with  
23 specially-designed data-harvesting software, a hacker could determine the secret  
24 Internet address of each scene file, and the full catalog of scene files could be crawled  
25 and scraped.

26         38. Without such tools and techniques, users of Planner 5D's website could  
27 not and cannot access the location or the content of even one of Planner 5D's over-  
28 45,000 scene files.

1           39.     The data file underlying each individual scene, like those underlying  
2 each object, is a trade secret belonging to Planner 5D. Separately, the *compilation* of  
3 over 45,000 scene data files is a trade secret belonging to Planner 5D. The company  
4 spent years and significant sums of money creating and compiling these trade  
5 secrets.

6           **B.     Planner 5D’s Terms of Service**

7           40.     When Princeton crawled and scraped Planner 5D’s data files, its Terms  
8 of Service strictly limited users’ use of the website and its materials, including a  
9 blanket prohibition on “access[ing]” or “acquir[ing]” Planner 5D’s files. No user was  
10 permitted to

11                   collect, use, copy or distribute any portion of the Planner5D  
12 project or the Materials [defined as any materials found or  
13 created on the Planner 5D site]; resell, publicly perform or  
14 publicly display any portion of the Materials; modify or  
15 otherwise make any derivative uses of any portion of the  
16 Planner5D project, the Mobile applications or the Materials;  
17 use any “deep-link,” “page-scrape,” “robot,” “spider” or other  
18 automatic device, program, algorithm or methodology which  
19 perform similar functions to access, acquire, copy, or monitor  
20 any portion of the Planner5D project; . . . download (other than  
21 page caching) any portion of the Planner5D project, the  
22 Materials or any information contained therein or use [of] the  
23 Planner5D project or the Materials other than for their  
24 intended purposes.

25           41.     Because these Terms of Service prohibit even “access[ing]” or  
26 “acquir[ing]” the underlying data files, they protected the secrecy of Planner 5D’s  
27 data files more completely than would a simple non-disclosure agreement. Non-  
28 disclosure agreements bind parties who have been shown confidential information  
not to disclose it to others. Planner 5D’s Terms of Service go further. They prohibit  
users even from *seeing* (via “access[ing]” or “acquir[ing]”) the information in the first  
place. Users cannot, of course, disclose information they have never seen. Thus,  
because users only see objects and scenes as *rendered*, never as data files, Planner 5D’s  
Terms of Service, which prohibit access and viewing of those underlying files, lock

1 up those files more securely than if users were shown the files and merely  
2 promised—as with an NDA—never to reveal them.

3 42. Because the Terms of Service prohibited Princeton from even *accessing*  
4 Planner 5D’s underlying data files, and also prohibited it from acquiring or sharing  
5 them in any manner (such as by “download[ing],” “distribut[ing],” or “resell[ing]”  
6 the files), the Terms of Service created a duty of confidentiality for Princeton to  
7 maintain these files’ secrecy. Princeton breached that duty, as detailed elsewhere in  
8 this First Amended Complaint.

9 43. Planner 5D is the successor-in-interest to the rights bestowed on  
10 “Farminers Limited” in the Terms of Service. Farminers Limited was an early  
11 investor in the business, but subsequently assigned all of its intellectual property  
12 rights, including all rights under the Terms of Service, to Planner 5D. Even before  
13 this assignment, Planner 5D was an express intended beneficiary of the Terms of  
14 Service.

### 15 C. Combined Effect of Structural and Legal Barriers

16 44. Acting together, the Planner 5D Terms of Service and the website  
17 architecture described above, where users are walled off from both the location and  
18 the content of Planner 5D’s data files, create a rigorous barrier blocking access to, or  
19 even awareness of, the content of the underlying data files. Users see only renderings  
20 of objects that they can drag and drop into renderings of floor plans (scenes). Once  
21 dropped into rendered scenes, users can resize, reposition, or reorient the rendered  
22 objects. What they may never do is see or access, much less download or copy, the  
23 underlying data files from which those renderings are made.

24 45. Planner 5D’s complete concealment of both the location and the content  
25 of its underlying data files distinguishes this case from ones in which website  
26 operators gave users “unfettered access” to each and every trade secret they later  
27 seek to litigate. *Cf. Broker Genius, Inc. v. Zalta*, 280 F. Supp. 3d 495, 521-22 (S.D.N.Y.  
28 2017) (users given “unfettered access” to all trade secrets at issue). As described in

1 detail above, Planner 5D consistently walls off both the location and content of the  
2 trade secrets at issue here, and, under its Terms of Service, separately prohibits  
3 circumventing these protections via crawling, scraping, or otherwise accessing its  
4 data files.

5 **D. Planner 5D’s Business Evolves into AI and Scene Recognition.**

6 46. As the importance and promise of scene-recognition technology grew  
7 in the years since Planner 5D’s founding, the company’s core business objective  
8 likewise evolved from providing home design tools to becoming a leader and  
9 innovator in computer scene recognition.

10 47. The market for AI-enhanced software is expected to grow to \$60 billion  
11 by 2025. One of Planner 5D’s key goals has become leveraging its unparalleled  
12 repository of three-dimensional object and scene files to develop first-of-its-kind  
13 scene-recognition technology. To that end, over the past several years Planner 5D has  
14 invested significantly in developing algorithms that capitalize on Planner 5D’s  
15 catalog of three-dimensional files to achieve market-leading 3D recognition.

16 **E. Defendants’ Identification, Scraping, Copying, and Use of  
17 Planner 5D’s Files**

18 **1. Princeton’s Acquisition, Use, and Distribution of  
19 Planner 5D’s Object and Scene Files**

20 48. On information and belief, sometime in or before 2016, scene-  
21 recognition scientists at Princeton determined that large sets of realistic, digitized,  
22 three-dimensional scene and object data were critical to their research. In a  
23 December 30, 2016 academic paper on scene understanding, they wrote that  
24 “[i]ndoor scene understanding is central to applications such as robot navigation and  
25 human companion assistance.” (Yinda Zhang *et al.*, *Physically-Based Rendering for  
26 Indoor Scene Understanding Using Convolutional Neural Networks*, 1 (Proceedings of  
27 IEEE Conference on Computer Vision and Pattern Recognition, 2017),  
28 <https://arxiv.org/pdf/1612.07429v2.pdf> (last visited June 4, 2019).) The Princeton  
scientists noted that “[o]ver the last years, data-driven deep neural networks have

1 outperformed many traditional approaches thanks to their representation learning  
2 capabilities.” (*Id.*)

3 49. Yet such successful data-driven methods had a built-in limitation:  
4 finding enough data. The Princeton researchers wrote: “One of the bottlenecks in  
5 training for better representations is the amount of available per-pixel ground truth  
6 data that is required for core scene understanding tasks.” (*Id.*) As one of these  
7 authors separately wrote in a slide presentation he posted to a Princeton URL: “What  
8 is the main roadblock for 3D scene understanding and research?” “Data!!”  
9 (*Funkhouser, supra*, at 8-9.)

10 50. “To address this problem,” the Princeton scientists observed in their  
11 December 2016 article, other researchers had proposed using synthetic data. Yet no  
12 one had explained where such synthetic data could be found. In their article, the  
13 Princeton authors solved this problem. Their solution: download all required data  
14 from Planner 5D. As the authors put it: “In this work, we introduce a large-scale  
15 synthetic dataset with 400K physically-based rendered images from 45K realistic 3D  
16 indoor scenes.” The data came from a “a collection of 3D scene models downloaded  
17 from the Planner 5D website.” (*Zhang et al., supra*, at 1, 3.)

18 51. The Princeton authors explained that the downloaded Planner 5D  
19 dataset contained “45622 scenes with over 5M instances of 2644 unique objects  
20 among 84 objects categories.” (*Id.* at 3.) Special surfaces provided by Planner 5D gave  
21 the objects a desirable “photo-realistic” appearance. (*Id.*) Another key feature of the  
22 Planner 5D dataset was that “indoor layouts, furniture/object alignment, and surface  
23 materials are designed by *people*.” (*Id.*) (emphasis added). Human-designed models  
24 and scenes were likely to be realistic. And realism was vital for accurate machine  
25 learning. (*Id.*)

26 52. Princeton called its collection of Planner 5D data the “SUNCG dataset.”  
27 It offered this link for registering to download the dataset:  
28 <http://suncg.cs.princeton.edu/> (now re-directed to Princeton’s home page). In the

1 ensuing years, Planner 5D's data figured prominently in the Princeton's researchers'  
2 work, including in further articles they published on scene recognition. (E.g., Shuran  
3 Song *et al.*, *Im2Pano3D: Extrapolating 360° Structure and Semantics Beyond the Field of*  
4 *View*, 8 (Proceedings of IEEE Conference on Computer Vision and Pattern  
5 Recognition, 2018), <https://arxiv.org/pdf/1712.04569.pdf>) (last visited June 4, 2019).)  
6 One co-author on these articles, Manolis Savva, is now a senior Facebook computer-  
7 vision researcher.

8 53. Planner 5D's data also became featured in the work of researchers at  
9 other institutions, including at Facebook. (E.g., Abhishek Das *et al.*, *Embodied Question*  
10 *Answering*, 4 (Computer Vision and Pattern Recognition Expo, 2018),  
11 <https://embodiedqa.org/paper.pdf>) ("We instantiate EmbodiedQA in House3D [1], a  
12 recently introduced rich, simulated environment based on 3D indoor scenes from the  
13 SUNCG dataset [8]. Concretely, SUNCG consists of synthetic 3D scenes with realistic  
14 room and furniture layouts, manually designed and crowdsourced using an online  
15 interior design interface (Planner5D [38]).")

16 54. Another project relying on the SUNCG dataset was "PlanIT." A  
17 principal author of this project was Manolis Savva, the senior Facebook computer-  
18 vision researcher who co-authored the articles, discussed above, that described  
19 Princeton's downloading and use of Planner 5D's data.

20 55. Princeton's researchers have thus exploited, and continue to exploit,  
21 Planner 5D's core asset, and are doing so for the same purpose Planner 5D has set for  
22 itself: developing artificial intelligence applications featuring 3D scene recognition.

23 56. Planner 5D will need discovery to determine the precise means by  
24 which Princeton scraped Planner 5D's data files. But on information and belief, the  
25 Princeton researchers or others acting on their behalf executed a detailed, multi-step  
26 plan to pierce Planner 5D's software protections and acquire its data. First, using  
27 software developer tools, Princeton or its agents monitored and intercepted  
28 communications activity between Planner 5D's software and its European servers.



1 Through this monitoring and interception, Princeton extracted key information  
2 pointing it to the secret locations of all data files on Planner 5D's servers. Princeton  
3 then wrote its own data-harvesting software that drew on the stolen Internet address  
4 information to allow it to crawl and scrape the entirety of Planner 5D's then-existing  
5 data files.

6 57. The data scraping techniques Princeton used to acquire Planner 5D's  
7 data files violated clear prohibitions in the Terms of Service against using any "'page-  
8 scrape,' 'robot,' 'spider[,] or other automatic device . . . to access, acquire, copy, or  
9 monitor any portion of the Planner5D project."

10 58. These Terms protected the secrecy of Planner 5D's data files one level  
11 more securely than a standard non-disclosure agreement. Standard NDAs prohibit  
12 users from disclosing secret information that is shared with them. Planner 5D's  
13 Terms prohibit users from ever *seeing* the information. There is thus nothing for users  
14 to promise not to disclose. Those never shown a secret recipe cannot sensibly  
15 promise not to reveal it.

16 59. Because Planner 5D's website hid the locations and contents of its data  
17 files, and because Princeton had to design and deploy hacking software to obtain this  
18 information, Princeton knew or should have known that Planner 5D intended for the  
19 data files to remain confidential.

20 60. Separately, Princeton's clear violation of the Terms of Service's  
21 prohibitions on scraping, crawling, and downloading Planner 5D's data, and its  
22 prohibitions on use of the data other than for its intended purpose of interior design,  
23 constituted improper means of acquiring the data.

24 61. Planner 5D did not become aware of any of this until 2018. But it has  
25 since determined that more than 99.9% of the data files in the SUNCG dataset are  
26 identical copies of data files from Planner 5D's object and scene data file collection at  
27 the time. On information and belief, the remaining .1% of the files are also  
28 downloaded Planner 5D data files, but ones that have been slightly altered. Some of

1 the SUNCG data files even continue to bear Planner 5D's registered trademark,  
2 <PLANNER 5D>.

3 **2. Facebook's Involvement with Princeton and the**  
4 **SUNCG Dataset, Including the SUMO Challenge**

5 62. Facebook, Inc. and Facebook Technologies, LLC have also been acutely  
6 interested in scene-recognition technology. They have created and funded their own,  
7 in-house team of scientists and engineers to research and develop scene and object  
8 recognition and understanding. This research team operates, on information and  
9 belief, within Facebook's "Facebook Reality Labs," a major AR/VR (augmented  
10 reality / virtual reality) research center with offices across the United States.

11 63. In 2018, Facebook Reality Labs joined with researchers at Princeton,  
12 Stanford, UC Berkeley, Georgia Tech, and other institutions to jointly organize the  
13 first Scene Understanding and Modeling (SUMO) Challenge. The primary sponsor of  
14 the SUMO Challenge was Facebook. The SUMO Challenge "targets development of  
15 comprehensive 3D scene understanding and modeling algorithms." (See Facebook  
16 Research, *Facebook Reality Labs Launches the Scene Understanding and Modeling (SUMO)*  
17 *Challenge*, FACEBOOK RESEARCH (June 3, 2019, 5:53 PM),  
18 [https://research.fb.com/facebook-reality-lab-launches-the-scene-understanding-and-  
19 modeling-sumo-challenge/](https://research.fb.com/facebook-reality-lab-launches-the-scene-understanding-and-modeling-sumo-challenge/).)

20 64. The SUMO Challenge was developed by a team of computer vision  
21 researchers at Facebook, with help from researchers at Stanford, Princeton, and  
22 elsewhere. (*Id.*) Current and former Stanford and Princeton researchers have also  
23 served as SUMO Challenge organizers, advisors, or program committee members.

24 65. SUMO Challenge contestants are "evaluated on their ability to  
25 consistently infer the correct geometry, pose, appearance and semantics of the  
26 elements" of scenes supplied by the SUMO Challenge organizers. (*Id.*) Winners were  
27 promised cash prizes and speaking spots at the SUMO Challenge conference.  
28

1           66.     Facebook directed SUMO Challenge participants to the SUNGC dataset  
2 to develop and hone their contest submissions. On information and belief, Facebook  
3 and the other SUMO Challenge organizers, including Stanford and Princeton, made  
4 their own copy of the Princeton SUNCG dataset, and stored it at a Stanford URL.  
5 Facebook posted a link to this Stanford URL on its SUMO Challenge web page,  
6 encouraging contestants to access, download, and use the dataset for their work. On  
7 information and belief, dozens of copies or more of this copy of the SUNCG dataset  
8 have been downloaded and used, by an unknown number of users.

9           67.     In 2019, the Facebook defendants and other SUMO Challenge  
10 organizers launched another SUMO Challenge, the 2019 SUMO Challenge.

11           68.     Facebook has also made other copies and other uses of the SUNCG  
12 dataset. It linked to one such copy in another of its object-recognition projects, the  
13 “House 3D environment.” According to Facebook, House 3D “is a rich environment  
14 containing thousands of human-designed 3D scenes of visually realistic houses with  
15 fully labeled 3D objects, textures, and scene layouts.” Once again, these thousands of  
16 scenes came from Planner 5D. Facebook got them by “extract[ing them] from the  
17 SUNCG dataset.” (*See House3D*, FACEBOOK ARTIFICIAL INTELLIGENCE (June 4, 2019,  
18 5:56 PM), <https://ai.facebook.com/tools/house3d>.)

19           69.     Facebook also sponsors a scene-recognition project called AI Habitat, a  
20 new simulation platform that is designed to train machines to recognize interior  
21 scenes using photo-realistic, simulated three-dimensional environments. Facebook’s  
22 AI Habitat project relies on the SUNCG dataset as a source of realistic three-  
23 dimensional environments.

24           70.     Facebook maintains many close connections to Princeton and its  
25 researchers. On information and belief, Facebook has supported Princeton and its  
26 researchers financially. For example, Princeton’s “Vision & Robotics” Department  
27 has publicly thanked Facebook (among others) for its “generous support” “for our  
28 research.” Dr. Shuran Song, a Princeton Ph.D student and co-author of several of the

1 articles describing Princeton’s downloading of Planner 5D’s data, has been a  
2 recipient of “a Facebook Fellowship,” according to an article she and five other  
3 Princeton scientists authored. (Shuran Song *et al.*, *Semantic Scene Completion from a*  
4 *Single Depth Image* 9 (Proceedings of IEEE Conference on Computer Vision and  
5 Pattern Recognition 2017), <https://arxiv.org/pdf/1611.08974v1.pdf> (last visited June 4,  
6 2019).)

7 71. Another scene-recognition researcher, Manolis Savva, who co-authored  
8 multiple articles with Princeton’s Shuran Song discussing Princeton’s harvesting of  
9 Planner 5D’s data for use in the SUNCG dataset, is a visiting researcher at Facebook  
10 and a lead researcher at Facebook’s AI Habitat computer-vision project. One of  
11 Facebook’s leading scene-recognition researchers was thus a co-author of the very  
12 articles detailing Princeton’s acquisition and harvesting of Planner 5D’s data for use  
13 in the SUNCG dataset.

14 72. Further, and as noted above, the SUNCG dataset Facebook has been  
15 using so intensively includes files that still bear Planner 5D’s registered trademark:  
16 <PLANNER 5D>.

17 73. Facebook’s close association with so many of the Princeton scientists  
18 who scraped and downloaded Planner 5D’s data without permission, including  
19 Shuran Song and Manolis Savva; its “generous support” of Princeton’s Vision &  
20 Robotics Department; its copying and extensive use of a dataset that still includes  
21 Planner 5D’s registered trademark; and its co-sponsorship with Princeton of the  
22 SUMO Challenge, all strongly suggest that Facebook had actual knowledge, and at  
23 the very least reason to know, that the SUNCG dataset contained proprietary  
24 information belonging to Planner 5D, and that Princeton—which could not have  
25 shown Facebook any authorization for its use of that information, since it lacked  
26 any—had acquired the SUNCG dataset by improper means, and under  
27 circumstances giving rise to a duty to maintain the secrecy, and limit the use, of that  
28 data.

1           74.     Indeed, on information and belief, researchers then-affiliated with  
2 Facebook knew of, supported, participated in, and benefited from all of Princeton's  
3 research alleged above, including the scraping and exploitation of Planner 5D's data.

4           75.     In addition, on information and belief, as an agent, partner, or joint  
5 venturer of Princeton in the SUMO Challenge, Facebook also had imputed  
6 knowledge that Princeton misappropriated the SUNCG dataset from Planner 5D.

7           76.     Finally, on information and belief, Facebook knew that Princeton  
8 acquired the SUNCG dataset from Planner 5D without Planner 5D's permission and  
9 in violation of the Terms of Service.

10           **F.     Defendants' Knowledge of the Terms of Service**

11           77.     On information and belief, Princeton and Facebook each in fact saw  
12 Planner 5D's Terms of Service, and thus are each bound by them.

13           78.     Princeton also had constructive or inquiry knowledge of Planner 5D's  
14 Terms of Service, and thus is bound by them, because of its sophistication, because of  
15 its repeated interaction with Planner 5D's software and website, because data  
16 scraping without permission is, by its nature, likely to infringe copyrights and other  
17 intellectual property rights, and because Princeton's data-scraping required it to  
18 consciously pierce the barriers Planner 5D had erected to block public access to the  
19 data files, all of which should have indicated to Princeton that data-scraping was  
20 likely not authorized by Planner 5D under its Terms of Service.

21           79.     Facebook also had constructive or inquiry knowledge of Planner 5D's  
22 Terms of Service. It was funding Princeton's computer vision department,  
23 sponsoring its researchers, working closely with Princeton on the SUMO Challenge,  
24 and employing as a lead scene-recognition researcher one of the authors who  
25 violated those Terms by scraping and downloading Planner 5D's data. Facebook also  
26 has its own acute interest in commercially exploiting the SUNCG dataset, and knew  
27 or should have known to investigate the provenance of this valuable data, especially  
28 where data elements still bore Planner 5D's registered trademark.

1           80.     In addition, and on information and belief, before sharing the SUNCG  
2 dataset with Facebook and the other SUMO challenge organizers, Princeton would  
3 have informed Facebook and the others that it acquired the SUNCG dataset from  
4 Planner 5D without its permission.

5           **G.     Defendants' Continuing Wrongdoing**

6           81.     Like Princeton, Facebook is exploiting the Planner 5D dataset for the  
7 same purpose Planner 5D set for itself: to train artificial intelligence applications to  
8 recognize 3D interior scenes. Worse, Facebook explicitly secured from SUMO  
9 Challenge participants the right to commercialize the fruits of their work. This strikes  
10 at the heart of Planner 5D's business objective.

11          82.     In March 2019, Planner 5D wrote Facebook, Princeton, and others,  
12 demanding that they cease and desist infringement of Planner 5D's copyrights. Yet  
13 Princeton and Facebook, on information and belief, nonetheless continue to use the  
14 SUNCG dataset in their computer vision R & D efforts, and to allow or encourage  
15 others' use of infringing and misappropriated copies of Planner 5D's copyrighted  
16 and trade secret materials.

17          83.     Defendants' copying, misappropriation, and especially public  
18 disclosure and dissemination of Planner 5D's data files threatens to destroy the  
19 market for Planner 5D's core asset. It has inflicted catastrophic and potentially  
20 permanent damage on the company.

21                                   **FIRST CAUSE OF ACTION**  
22                                   **(Misappropriation of Individual Trade Secrets Under the**  
                                      **Defend Trade Secrets Act – Against All Defendants)**

23          84.     Planner 5D incorporates the prior paragraphs of this First Amended  
24 Complaint as though fully set forth here.

25          85.     The locations and contents of the data files defining the objects created  
26 by Planner 5D, and of those defining Planner 5D's vast collection of scenes, are trade  
27 secrets belonging to Planner 5D. Planner 5D takes reasonable measures to preserve  
28 this secrecy, as described above. Also as described above, these files' contents and

1 locations are not generally known to, nor readily ascertainable through proper means  
2 by, the public, and they derive independent economic value from not being generally  
3 known or readily ascertainable.

4 86. By, among other things, using software developer tools to monitor and  
5 intercept communications activity between Planner 5D's software and its European  
6 servers, and by using these intercepted communications together with custom-  
7 engineered software to piece together the secret Internet addresses of over 48,000 of  
8 Planner 5D's secret data files, and to crawl those addresses and scrape for those files,  
9 thereby stealing the entirety of Planner 5D's then-available data files, all in direct  
10 violation of Planner 5D's clear Terms of Service, as well as by committing the other  
11 acts and omissions described above, Princeton acquired Planner 5D's trade secrets  
12 through improper means. Its acquisition, disclosure, and use of the trade secrets  
13 constituted trade secret misappropriation.

14 87. By, among other things, continuing to use Planner 5D's object and  
15 scene files even after Facebook knew and had reason to know these trade secrets had  
16 been acquired by Princeton through improper means, and/or had been acquired  
17 under circumstances giving rise to Princeton's duty to maintain their secrecy or limit  
18 their use, and/or had been derived from Princeton which owed Planner 5D a duty to  
19 maintain the secrecy or limit the use of Planner 5D's trade secrets, the Facebook  
20 defendants misappropriated Planner 5D's trade secrets.

21 88. On information and belief, the defendants' acts of trade secret  
22 misappropriation were intentional, willful, and malicious, and performed with  
23 knowledge that the misappropriated secrets belonged to Planner 5D and not the  
24 defendants.

25 89. The trade secrets misappropriated here relate to a product and a service  
26 that are used in, and are intended for use in, interstate and foreign commerce.

27 90. The natural, probable, proximate, and foreseeable result of defendants'  
28 trade secret misappropriations was to cause immense damage to Planner 5D, and to

1 unjustly enrich the defendants. And the misappropriations in fact did cause immense  
2 damage to Planner 5D, and did unjustly enrich the defendants, all in amounts to be  
3 proved at trial.

4 91. Planner 5D is entitled to recover damages for the actual loss caused by  
5 defendants' misappropriation, the (non-duplicative) unjust enrichment defendants  
6 received, and exemplary damages of up to twice the damages award, all as  
7 determined at trial. Planner 5D is also entitled to a permanent injunction prohibiting  
8 continuing or future trade secret misappropriation, destruction of all  
9 misappropriated trade secrets, and attorneys' fees and costs.

10 **SECOND CAUSE OF ACTION**  
11 **(Misappropriation of Trade Secret Compilation Under the**  
12 **Defend Trade Secrets Act – Against All Defendants)**

13 92. Planner 5D incorporates the prior paragraphs of this First Amended  
14 Complaint as though fully set forth here.

15 93. The *compilation* of data files defining the objects created by Planner 5D,  
16 and the *compilation* of data files defining Planner 5D's vast collection of scenes,  
17 together with the locations of these compilations, are trade secrets belonging to  
18 Planner 5D, and are each a distinct and separate trade secret from any *individual*  
19 object or scene file, or individual location. Planner 5D takes reasonable measures to  
20 preserve the secrecy of these compilations and their locations, as described above.  
21 Also as described above, these compilations and locations are not generally known  
22 to, or readily ascertainable through proper means by, the public, and they derive  
23 independent economic value from not being generally known or readily  
24 ascertainable. It would take an extraordinary amount of time and effort to recreate  
25 these compilation trade secrets through proper means.

26 94. By, among other things, using software developer tools to monitor and  
27 intercept communications activity between Planner 5D's software and its European  
28 servers, and by using these intercepted communications together with custom-  
engineered software to piece together the secret Internet addresses of the entirety of



1 Planner 5D's then-existing compilation of over 48,000 objects and scene files, and to  
2 crawl those addresses and scrape for all files in that compilation, thereby stealing the  
3 entire then-existing compilation of Planner 5D's data files, all in direct violation of  
4 Planner 5D's clear Terms of Service, Princeton acquired Planner 5D's trade secret  
5 compilation through improper means. Its acquisition, disclosure, and use of that  
6 trade secret compilation constituted trade secret misappropriation.

7 95. By, among other things, continuing to use Planner 5D's object and  
8 scene file compilations even after Facebook knew and had reason to know these  
9 trade secret compilations had been acquired by Princeton through improper means,  
10 and/or had been acquired under circumstances giving rise to Princeton's duty to  
11 maintain their secrecy or limit their use, and/or had been derived from Princeton  
12 which owed Planner 5D a duty to maintain the secrecy or limit the use of  
13 Planner 5D's trade secret compilations, the Facebook defendants misappropriated  
14 Planner 5D's compilation trade secrets.

15 96. On information and belief, the defendants' acts of trade secret  
16 misappropriation were intentional, willful, and malicious, and performed with  
17 knowledge that the misappropriated secrets belonged to Planner 5D and not the  
18 defendants.

19 97. The trade secret compilations misappropriated here relate to a product  
20 and a service that are used in, and are intended for use in, interstate and foreign  
21 commerce.

22 98. The natural, probable, proximate, and foreseeable result of defendants'  
23 trade secret misappropriations was to cause immense damage to Planner 5D, and to  
24 unjustly enrich the defendants. And the misappropriations in fact did cause immense  
25 damage to Planner 5D, and did unjustly enrich the defendants, all in amounts to be  
26 proved at trial.

27 99. Planner 5D is entitled to recover damages for the actual loss caused by  
28 defendants' misappropriation, the (non-duplicative) unjust enrichment defendants

1 received, and exemplary damages of up to twice the damages award, all as  
2 determined at trial. Planner 5D is also entitled to a permanent injunction prohibiting  
3 continuing or future trade secret misappropriation, destruction of all  
4 misappropriated trade secrets, and attorneys' fees and costs.

5 **THIRD CAUSE OF ACTION**  
6 **(Misappropriation of Individual Trade Secrets Under the**  
7 **California Uniform Trade Secrets Act — Against All Defendants)**

8 100. Planner 5D incorporates the prior paragraphs of this First Amended  
9 Complaint as though fully set forth here.

10 101. The locations and contents of the data files defining the objects created  
11 by Planner 5D, and of those defining Planner 5D's vast collection of scenes, are trade  
12 secrets belonging to Planner 5D. Planner 5D takes reasonable measures to preserve  
13 this secrecy, as described above. Also as described above, these files' contents and  
14 locations are not generally known to, nor readily ascertainable through proper means  
15 by, the public, and they derive independent economic value from not being generally  
16 known or readily ascertainable.

17 102. By, among other things, using software developer tools to monitor and  
18 intercept communications activity between Planner 5D's software and its European  
19 servers, and by using these intercepted communications together with custom-  
20 engineered software to piece together the secret Internet addresses of over 48,000 of  
21 Planner 5D's secret data files, and to crawl those addresses and scrape for those files,  
22 thereby stealing the entirety of Planner 5D's then-available data files, all in direct  
23 violation of Planner 5D's clear Terms of Service, as well as by committing the other  
24 acts and omissions described above, Princeton acquired Planner 5D's trade secrets  
25 through improper means. Its acquisition, disclosure, and use of the trade secrets  
26 constituted trade secret misappropriation.

27 103. By, among other things, continuing to use Planner 5D's object and  
28 scene files even after Facebook knew and had reason to know these trade secrets had  
been acquired by Princeton through improper means, and/or had been acquired

1 under circumstances giving rise to Princeton's duty to maintain their secrecy or limit  
2 their use, and/or had been derived from Princeton which owed Planner 5D a duty to  
3 maintain the secrecy or limit the use of Planner 5D's trade secrets, the Facebook  
4 defendants misappropriated Planner 5D's trade secrets.

5 104. On information and belief, the defendants' acts of trade secret  
6 misappropriation were intentional, willful, and malicious, and performed with  
7 knowledge that the misappropriated secrets belonged to Planner 5D and not the  
8 defendants.

9 105. The natural, probable, proximate, and foreseeable result of defendants'  
10 trade secret misappropriations was to cause immense damage to Planner 5D, and to  
11 unjustly enrich the defendants. And the misappropriations in fact did cause immense  
12 damage to Planner 5D, and did unjustly enrich the defendants, all in amounts to be  
13 proved at trial.

14 106. Planner 5D is entitled to recover damages for the actual loss caused by  
15 defendants' misappropriation, the (non-duplicative) unjust enrichment defendants  
16 received, and exemplary damages of up to twice the damages award, all as  
17 determined at trial. Planner 5D is also entitled to a permanent injunction prohibiting  
18 continuing or future trade secret misappropriation, destruction of all  
19 misappropriated trade secrets, and attorneys' fees and costs.

20 **FOURTH CAUSE OF ACTION**  
21 **(Misappropriation of Trade Secret Compilation Under the**  
22 **California Uniform Trade Secrets Act — Against All Defendants)**

23 107. Planner 5D incorporates the prior paragraphs of this First Amended  
24 Complaint as though fully set forth here.

25 108. The *compilation* of data files defining the objects created by Planner 5D,  
26 and the *compilation* of data files defining Planner 5D's vast collection of scenes,  
27 together with the locations of these compilations, are trade secrets belonging to  
28 Planner 5D, and are each a distinct and separate trade secret from any *individual*  
object or scene file, or individual location. Planner 5D takes reasonable measures to

1 preserve the secrecy of these compilations and their locations, as described above.  
2 Also as described above, these compilations and locations are not generally known  
3 to, or readily ascertainable through proper means by, the public, and they derive  
4 independent economic value from not being generally known or readily  
5 ascertainable. It would take an extraordinary amount of time and effort to recreate  
6 these compilation trade secrets through proper means.

7 109. By, among other things, using software developer tools to monitor and  
8 intercept communications activity between Planner 5D's software and its European  
9 servers, and by using these intercepted communications together with custom-  
10 engineered software to piece together the secret Internet addresses of the entirety of  
11 Planner 5D's then-existing compilation of over 48,000 objects and scene files, and to  
12 crawl those addresses and scrape for all files in that compilation, thereby stealing the  
13 entire then-existing compilation of Planner 5D's data files, all in direct violation of  
14 Planner 5D's clear Terms of Service, Princeton acquired Planner 5D's trade secret  
15 compilation through improper means. Its acquisition, disclosure, and use of that  
16 trade secret compilation constituted trade secret misappropriation.

17 110. By, among other things, continuing to use Planner 5D's object and  
18 scene file compilations even after Facebook knew and had reason to know these  
19 trade secret compilations had been acquired by Princeton through improper means,  
20 and/or had been acquired under circumstances giving rise to Princeton's duty to  
21 maintain their secrecy or limit their use, and/or had been derived from Princeton  
22 which owed Planner 5D a duty to maintain the secrecy or limit the use of  
23 Planner 5D's trade secret compilations, the Facebook defendants misappropriated  
24 Planner 5D's compilation trade secrets.

25 111. On information and belief, the defendants' acts of trade secret  
26 misappropriation were intentional, willful, and malicious, and performed with  
27 knowledge that the misappropriated secrets belonged to Planner 5D and not the  
28 defendants.



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- concert with them, from further acts of trade secret
- misappropriation;
- f. for an order requiring the destruction of all misappropriated trade secrets; and
- g. for such other relief as the Court deems just and proper.

**DEMAND FOR JURY TRIAL**

Planner 5D demands a jury trial on all issues qualifying for one.

RESPECTFULLY SUBMITTED,

DATED: December 6, 2019

THE BUSINESS LITIGATION GROUP, P.C.

By:       /s/Marc N. Bernstein        
      Marc N. Bernstein

Attorneys for Plaintiff  
UAB "PLANNER5D"