**IN THE UNITED STATES DISTRICT COURT
FOR THE NORTHERN DISTRICT OF NEW YORK**

RENSSELAER POLYTECHNIC INSTITUTE and CF DYNAMIC ADVANCES LLC, Plaintiffs, v. AMAZON.COM, INC., Defendant.	Civil Action No. <u>1:23-cv-227</u> (BKS/TWD) **JURY TRIAL DEMAND**

COMPLAINT FOR PATENT INFRINGEMENT

Plaintiff Rensselaer Polytechnic Institute ("Rensselaer") is the nation's oldest technological university, located in the City of Troy, Rensselaer County, New York. Plaintiff CF Dynamic Advances LLC ("CF Dynamic") is a Delaware corporation whose principal place of business is located at 1345 Avenue of the Americas, 46th Floor, New York, NY 10105. Plaintiffs collectively file this Complaint against Amazon.com, Inc. ("Amazon" or "Defendant"). Plaintiffs allege as follows:

NATURE OF THE ACTION

1.   Plaintiffs bring this patent infringement action to protect their intellectual property and stop Defendant from continuing its wrongful and unlicensed use of Plaintiffs' patented technology. This protected technology includes features used in natural language processing, and embodies decades of innovation, investment, and effort.

2.   Defendant provides certain products and services, including but not limited to its Amazon Alexa voice assistant and Alexa-enabled devices, which include the Echo, Echo Dot,

Echo Plus, Echo Show, Echo Connect, Echo Look, Echo Spot, Amazon Tap, Fire TV

Accessories, and Fire Tablets ("the Accused Products"). The infringing Accused Products made,

sold, and/or used by Defendant include, but are not limited to, the devices listed in **Appendix A**.

Defendant's products and related services make use of Plaintiffs' patented technology and

infringe U.S. Patent No. 7,177,798 ("the Asserted Patent" or "the '798 Patent"), which is

attached hereto as **Exhibit A**.

3.   Accordingly, Plaintiffs seek damages in an amount adequate to compensate them

for Defendant's infringement, including trebled damages based on Defendant's willful

infringement of the '798 Patent, or in the alternative, an award of a reasonable ongoing royalty

for future infringement and Plaintiffs' attorneys' fees and costs associated with this action.

THE PARTIES

4.   Plaintiff Rensselaer Polytechnic Institute is the nation's oldest technological

university. Its main campus is located at 100 Eighth St., Troy, Rensselaer County, New York

12180. Rensselaer's mission is to apply science to the common purposes of life. Rensselaer

commercializes its patented inventions to the benefit of the general public.

5.   Plaintiff CF Dynamic is a Delaware corporation whose principal place of business

is located at 1345 Avenue of the Americas, 46th Floor, New York, NY 10105. CF Dynamic is

the exclusive licensee of U.S. Patent No. 7,177,798—a natural language processing patent

granted to Rensselaer. CF Dynamic facilitates Rensselaer's goal of commercializing its patented

inventions to the benefit of the general public and seeks to further Rensselaer's mission to apply

science to the common purposes of life.

6.   Defendant Amazon.com, Inc. is a Delaware corporation with its principal place of

business located at 410 Terry Avenue North, Seattle, Washington 98109-5210.

7.   Defendant Amazon is involved in the development, manufacture, import, and/or

sale of certain products that make use of Plaintiffs' patented technology. Products sold by

Amazon include, but are not limited to, the devices listed in **Appendix A**.

8.   Defendant Amazon is the largest internet retailer in the country.

JURISDICTION AND VENUE

9.   This lawsuit is a civil action for patent infringement arising under the patent laws

of the United States, 35 U.S.C. § 101 *et seq*. This Court has subject-matter jurisdiction pursuant

to 28 U.S.C. §§ 1331 and 1338(a).

10.   The Court has personal jurisdiction over Defendant because Defendant is present

within or has minimum contacts within the State of New York and the Northern District of New

York; Defendant has purposefully availed itself of the privileges of conducting business in the

State of New York and the Northern District of New York; Defendant has sought the protection

and benefit from the laws of the State of New York; Defendant regularly conducts business

within the State of New York and within the Northern District of New York; and Plaintiffs'

cause of action arises directly from Defendant's business contacts and other activities in the State

of New York and the Northern District of New York.

11.   More specifically, this court has personal jurisdiction over Defendant because

Defendant directly and/or through intermediaries, ships, distributes, uses, offers for sale, sells,

and/or advertises products and services in the United States, the State of New York, and the

Northern District of New York. This Court also has personal jurisdiction over Defendant because

Defendant has committed, contributed to, and induced acts of patent infringement and has

regularly and systemically conducted and solicited business in this District by and through at

least the sales and offers for sale of Defendant's products and services, and other contractual

arrangements with Defendant's customers, developers, distributors and third-parties using

Defendant's products and services located in and/or doing business in this District.

12.   Defendant also previously announced that it was considering New York for its

"second headquarters."[1]

13.   Further, Defendant provides and/or directs its products and services at customers

living in cities served by the United States District Court for this District.

14.   Defendant also owns, manages, or operates numerous locations within this

District and/or New York responsible for developing, marketing, or selling Defendant's products

to customers in this District.

15.   Venue is proper in this District under 28 U.S.C. §§ 1391 and 1400(b). Defendant

has transacted business in the Northern District of New York, and has directly committed acts of

patent infringement in the Northern District of New York, and has a regular and established

place of business in the Northern District of New York.

16.   Defendant engages in a substantial part of its ordinary business in a continuous

manner in the Northern District of New York.

17.   Defendant and a number of its subsidiaries are registered to do business in this

District, and particularly in Albany, New York.

18.   Defendant employs a number of individuals within this District.

19.   Defendant's employees within this District include at least its executives,

technical employees, sales representatives, and others.

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[1] THE NEW YORK TIMES, *Amazon Chooses 20 Finalists for Second Headquarters* (Jan. 18, 2018), *available at* https://www.nytimes.com/2018/01/18/technology/amazon-finalists-headquarters.html (last accessed February 15, 2023).

20.   On information and belief, Defendant's employees within this District are directly involved in Defendant's direct infringement, including through the development, testing, demonstration, use, and sale of the Accused Products within this District.

21.   Defendant also maintains, controls, and pays for numerous permanent physical locations within this District.

22.   Defendant's physical locations within this District include a massive Amazon fulfillment center in Schodack, New York, in Rensselaer County, which Defendant uses to facilitate the sale of its Accused Products in this District and abroad.[2] Defendant's fulfillment center employs up to 1,000 full-time Amazon workers.

23.   Defendant's physical locations within this District also include physical stores from its wholly-owned subsidiary, Whole Foods Market, Inc. ("Whole Foods"), including at least the Whole Foods store located at 1425 Central Ave, Albany, NY 12205. Indeed, Defendant's Form 10-Qs, which present consolidated financial statements for the accounts of Amazon.com, Inc. and its wholly owned subsidiaries (including Whole Foods), shows a revenue category labeled "Physical stores,"[3] which Defendant's CFO has publicly tied to Defendant's Whole Food Stores. Moreover, Defendant has repeatedly ratified Whole Foods stores as its own places of business through earnings call statements, advertisement materials, and documentation provided to customers.

24.   Defendant's physical locations within this District further include stores that serve as a pick-up and return centers for its Accused Products. For example, Defendant operates and

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[2] TIMES UNION, *Massive Amazon fulfillment center opens in Schodack* (Sep. 9, 2020), *available at* https://www.timesunion.com/news/article/Massive-Amazon-distribution-center-opens-in-15554061.php (last accessed February 15, 2023).

[3] Amazon's Form 10-Q for Q3 2022.

advertises a number of Amazon Hub locations near this Court's Albany courthouse, which

Defendant either owns or rents:[4]
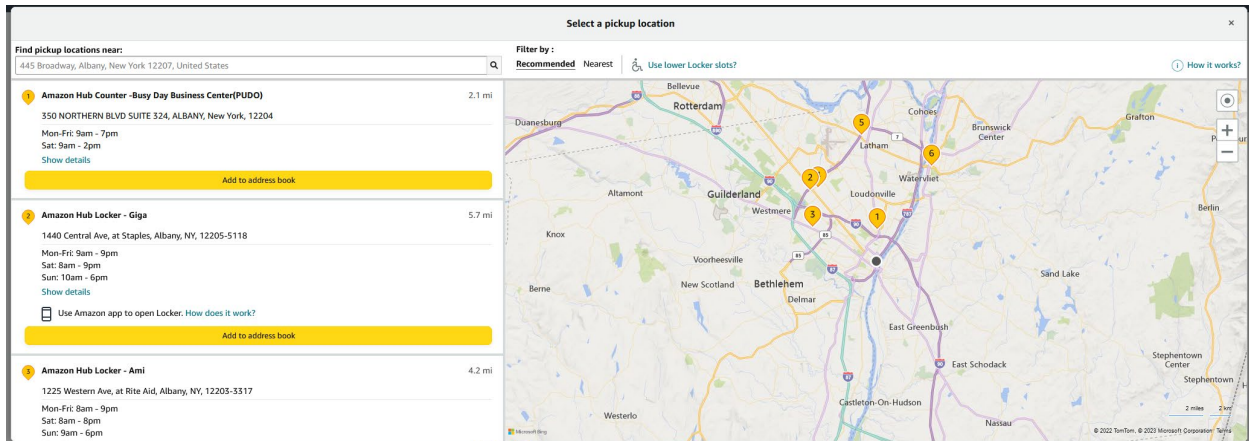
These locations include at least the following:

    a.   350 Northern Blvd Suite 324, Albany, New York, 12204;

    b.   1440 Central Ave, Albany, NY, 12205-5118;

    c.   1225 Western Ave, Albany, NY, 12203-3317;

    d.   1425 Central Ave, Albany, NY, 12205-5027;

    e.   601 Troy Schenectady Rd, Latham, NY, 12110-2813;

    f.   City Station West 1521 6th Ave, #109, Troy, NY, 12180.

25.   Amazon sets up, installs, configures, services, and conducts regular maintenance

on its Amazon Lockers at the above locations, through either its own employees and/or

technicians under Amazon's significant direction and control.

26.   Additionally, Defendant's website advertises a number of technical, business, and

marketing positions within New York to potential job applicants.[5]

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[4] YOUR ACCOUNT, *available at* https://www.amazon.com/gp/css/account/address/view.html (last accessed February 15, 2023).

[5] JOB SEARCH—AMAZON.JOBS, *available at* https://www.amazon.jobs/en/search?offset=0&result_limit=10&sort=relevant&state%5B%5D=

27.   Defendant also advertises on its website that it connects consumers with "hundreds of millions" of products through both its retail websites and physical stores: "We serve consumers through our retail websites and physical stores and focus on selection, price, and convenience. We design our websites to enable hundreds of millions of unique products to be sold by us and by third parties across dozens of product categories. Customers access our offerings through our websites, mobile apps, Alexa, and physically visiting our stores. We also manufacture and sell electronic devices, including Kindle e-readers, Fire tablets, Fire TVs, and Echo devices, and we develop and produce media content."[6]

28.   Defendant likewise advertises that it fulfills customer orders throughout North America and internationally through its extensive fulfillment and delivery networks, and through its physical stores: "We fulfill customer orders in a number of ways, including through: North America and International fulfillment and delivery networks that we operate; co-sourced and outsourced arrangements in certain countries; digital delivery; and through our physical stores. We operate customer service centers globally, which are supplemented by co-sourced arrangements."[7]

BACKGROUND OF THE TECHNOLOGY

29.   The technology at issue in this case pertains generally to the field of natural language processing.

New%20York&distanceType=Mi&radius=24km&latitude=40.71454&longitude=-74.00712&loc_group_id=&loc_query=New%20York%2C%20United%20States&base_query=Amazon&city=New%20York&country=USA&region=New%20York&county=New%20York&query_options=& (last accessed February 15, 2023).

[6] *See, e.g.*, Amazon.com, Inc. 2018 10-K at 3.

[7] *Id.*

30.   Natural language processing technology allows users to input into computers, smart phones, and other devices search queries or commands in plain or conversational language. Rather than requiring users to use specific terms or syntax, natural language processing technology simplifies for the user how to use voice operated devices.

31.   United States Patent No. 7,177,798, entitled "Natural Language Interface Using Constrained Intermediate Dictionary of Results," is directed at the field of natural language processing.

32.   The '798 Patent was duly and legally issued by the United States Patent & Trademark Office to inventors Dr. Cheng Hsu and Dr. Veera Boonjing on February 13, 2007, after a full and fair examination. The inventors assigned the '798 Patent to Rensselaer. A true and correct copy of the '798 Patent is attached to this Complaint as **Exhibit A**.

33.   Rensselaer was founded in 1824. It is the oldest technological university in the United States. Driven by its talented faculty, Rensselaer has dramatically expanded its research enterprise by focusing on five signature research areas: biotechnology; computation and information technology; experimental media and the arts; energy and the environment; and nanotechnology. Rensselaer is especially well-known for its success in the transfer of technology from the laboratory to the marketplace so that new discoveries and inventions benefit human life, protect the environment, and strengthen economic development. For the last decade, the "Rensselaer Plan" has provided a blueprint for transformation and impact. It has guided development of an exceptional environment for advancing research with the potential to address science and society's most challenging problems. Based on this strong foundation, Rensselaer's research has led to dramatic innovations in a host of technology areas. As one illustration of the

success of Rensselaer's research and innovation, the United States Patent & Trademark Office has issued over 300 patents to Rensselaer.

34.   Rensselaer is the owner of the '798 Patent. CF Dynamic is Rensselaer's exclusive licensee to the '798 Patent. As such, Plaintiffs have the right to sue for infringement and recover damages for infringement.

35.   Dr. Cheng Hsu and Dr. Veera Boonjing invented the technology claimed in the '798 Patent. At the time they invented the claimed technology, Dr. Hsu was a Professor of Decision Sciences and Engineering Systems at Rensselaer and Dr. Boonjing was a doctoral candidate at Rensselaer. Dr. Hsu currently is a professor of Industrial and Systems Engineering at Rensselaer. Dr. Boonjing is currently a professor of Mathematics and Computer Science at King Mongkut's Institute of Technology Ladkrabang in Thailand. In addition to being awarded the '798 Patent for their joint invention, Dr. Hsu and Dr. Boonjing have co-authored a number of articles on natural language processing technology.

36.   While natural language systems are commonplace today, this progress is the result of decades of hard work by some of the brightest minds in the field of artificial intelligence. That is because the understanding of speech has proven to be one of the most evasive goals in information technology.

37.   Before Dr. Hsu and Dr. Boonjing developed the invention disclosed in the '798 Patent, researchers had lowered expectations for practical natural language systems. Then-existing natural language prototypes focused on specific topics of conversations, and broader applications were more difficult. Further, then-existing natural language interfaces placed severe restrictions on the syntax with which users could articulate their natural language queries. Prior

to the patented invention, natural language systems had not achieved the accuracy and reliability expected of them.

38.   Many problems prevented researchers from accomplishing their goals for practical natural language systems. For example, many systems required exceedingly large collections of linguistic terms, and even then, could not assure successful closure of users' natural language queries. Because of the design complexity and keyword database size, most systems were impractical. Indeed, the '798 Patent specification is filled with examples of prior art language systems attempting, unsuccessfully, to accomplish the efficient processing of natural language inputs. *See, e.g.*, '798 Patent at 5:43-6:34.

39.   The '798 Patent discloses and claims novel methods for processing a natural language input. One advantage of this technology is that it provides users the ability to input search queries or commands to a device in a language they would use in conversation with another person. The '798 Patent's process can interpret a query articulated in plain natural language, such as would be used in common speech, by, for example, creating permutations of the concepts of the query, and interpreting the query accordingly.

40.   In this way, the patented technology allows a person to verbally communicate with a computer, including through oral requests, and the computer would learn from that communication and adjust future results. The patented technology, therefore, enables natural language systems to learn from users in a way that improves the system's effectiveness and efficiency.

41.   The '798 Patent has been repeatedly cited in subsequent patent applications filed by leading technology companies. The '798 Patent, its published application, or other patents

within the same family, have been cited in patent applications filed by Hewlett-Packard,

Microsoft, IBM, Sony, Google, and Apple.

42.   By way of example only, claim 9 of the '798 Patent recites:

> A computer-implemented method for processing a natural language input comprising:
>
> receiving a natural language input;
>
> providing from said natural language input a plurality of language-based database objects;
>
> identifying a finite number of permutations of the plurality of database objects, the database objects being stored in a metadata database comprising at least one of a group of information comprising case information, keywords, information models, and database values; and
>
> interpreting at least one of the permutations to provide determination of a result of the natural language input.

Id. at 37:9-29.

43.   In particular, the claimed invention comprises at least searching a metadata

database comprising "case information, keywords, information models, and database values"—

all of which shape the computer's response to the user's voice command. *Id.* at 37:24-27.

44.   Each of these components can be tied to key benefits of the invention, including

allowing for efficient searching and identification of keywords for the natural language

processing system. In one embodiment, this feature is described as "search and learn." *Id.* at

6:40. For example, in an embodiment of the invention, "keywords" include "natural words and

phrases users use to refer to database objects and information model elements in natural

articulation such as a natural language query." *Id.* at 15:61-63. Likewise, "case information" in

certain embodiments can help by "resolving [] ambiguity" related to the interpretation of the

user's voice command, thereby "reducing the need for new keywords." *Id.* at 14:56-58. Further,

in certain embodiments, "the information model describes the context, possible paths in the information model define the choices, and the user's selection solution," thereby allowing the system to "resolve ambiguity in the recognition of meaning terms" and "help determine the solution among multiple possible interpretations." *Id.* at 16:60-17:5. These are but some examples disclosed by the '798 Patent.

45.   This Court previously presided over patent litigation involving the '798 Patent in *Rensselaer Polytechnic Institute et al. v. Apple, Inc.*, Case No. 1:13-cv-00633-DEP (N.D.N.Y.) ("the Apple action").

46.   In the Apple Action, this Court explained that "the '798 Patent method eliminates the need for programmers conversant in SQL or other similar access languages, and instead permits use of a natural language query. The '798, unlike the prior art, addresses 'the issue of linguistic coverage and query disambiguation through direct use of the database, metadata database, and reference dictionary (essentially a specification of the metadata database) and case information.'"

47.   The Apple action was filed on June 3, 2013, and was resolved through a settlement approved by this Court on May 2, 2016.

FIRST CLAIM FOR RELIEF

Infringement of U.S. Patent No. 7,177,798

48.   Plaintiffs incorporate by reference the foregoing paragraphs.

49.   The '798 Patent was issued on February 13, 2007, and is titled "Natural Language Interface Using Constrained Intermediate Dictionary of Results."

50.   CF Dynamic is the exclusive licensee of all rights, title, and interest in the '798 Patent.

51.   The '798 Patent is valid and enforceable.

52.   The '798 patented technology is directed generally to natural language processing.

53.   Defendant's Accused Products—including Amazon Alexa, a cloud-based voice service available on Amazon Echo devices, among other Alexa-enabled devices—process natural language inputs as claimed in the '798 Patent.

54.   Defendant has infringed and continues to infringe, either literally or under the doctrine of equivalents, one or more claims of the '798 Patent by making, using, offering to sell, selling, or importing, in this judicial district and elsewhere in the United States, without authority, technology that processes natural language inputs as claimed in the '798 Patent, including without limitation Accused Products such as its Amazon Echo devices and Alexa-enabled devices. For example, these Accused Products include, but are not limited to, the devices listed in **Appendix A**.

55.   More specifically, Defendant's Accused Products infringe at least Claim 1 of the '798 Patent by at least employing a voice-based command system that allows the user to ask questions or provide commands for performing tasks using speech. For example, the Accused Products process the user's voice commands by interpreting the meaning of the input, accessing information, and/or performing tasks in response to the input. Indeed, Defendant advertises that Alexa is "the brain behind Echo" and is "always getting smarter," and asks users to provide a natural language query.[8] The Accused Products also search one or more databases based on a combination of historical and/or prior processing information; keywords; webs of organized

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[8] *See, e.g.*, AMAZON.EU, *Amazon Introduces Alexa and Echo, Echo Dot, and Echo Spot in France* (June 06, 2018), *available at* https://www.aboutamazon.eu/news/press-lounge/amazon-introduces-alexa-and-echo-echo-dot-and-echo-spot-in-france (last accessed February 15, 2023).

concepts and/or information; and one or more database values, such as user data, context data, state data, and/or application data.[9] The Accused Products further identify a number of database objects and determine a plurality of combinations in order to provide a verbal and/or visual response to the user—"just ask Alexa and get answers instantly."[10]

56.   Defendant has had actual knowledge of the '798 Patent and Defendant's infringement of the '798 Patent since at least February 2017, before the filing of this Complaint.

57.   Additionally, Defendant received a claim chart for the '798 Patent as early as March 10, 2017.

58.   Despite this knowledge, Defendant continued its infringing activities despite an objectively high likelihood that its activities constituted infringement of a valid patent, and this risk was either known or so obvious that it should have been known to Defendant. Thus, Defendant's infringement has been, and continues to be, willful and deliberate.

59.   Defendant actively induces third parties, including its customers, to infringe one or more claims of the '798 Patent in violation of 35 U.S.C. § 271(b) by encouraging and facilitating them to perform actions that Defendant knows to be acts of infringement of the '798 Patent. Defendant knows that the use of its voice service, Alexa, including use of the Amazon Echo devices and other Alexa-enabled devices, constitutes infringement of the '798 Patent. Defendant advertises the infringing products and services, publishes specifications and promotional literature encouraging customers to operate the Accused Products and services, creates and/or distributes user manuals for the Accused Products and services that provide

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[9] *See, e.g.*, AMAZON DEVELOPER, *Create the Interaction Model for Your Skill*, https://developer.amazon.com/en-US/docs/alexa/custom-skills/create-the-interaction-model-for-your-skill.html (last accessed February 15, 2023).

[10] *See supra* note 8.

instruction and/or encourage infringing use, and offers support and/or technical assistance to its customers that provide instructions on and/or encourage infringing use.

60.   For example, Defendant's Accused Products—including at least Amazon Alexa, available on Amazon Echo devices, among other Alexa-enabled devices—are operated by the end user, alone or in conjunction with Defendant, to process natural language inputs as claimed in the '798 Patent. Defendant encourages consumers to use its Accused Products, including Alexa, as claimed in the '798 Patent and, in fact, has entire webpages devoted to teaching consumers the benefits of using Alexa to process natural language inputs, how to use Alexa to process natural language inputs, and encouraging them to buy Alexa-enabled products so they can use Alexa to process natural language inputs.

61.   Defendant also contributes to the infringement of the '798 Patent in violation of 35 U.S.C. § 271(c). Defendant contributes to infringement of the '798 Patent by making, using, selling, offering to sell and/or importing components that are incorporated with third-party devices to infringe the '798 Patent. [11] The accused components constitute a material part of the invention claimed by the '798 Patent at least because they work in conjunction with third-party products or services, and they are specifically made to operate in a manner that infringes the '798 Patent by, among other things, enabling various devices, such as speakers, mobile devices, tablets, and other Alexa-enabled devices to process natural language inputs. The accused components are separable from Defendant's Alexa product and service, and are not staple articles or commodities of commerce suitable for substantial non-infringing use because they necessarily operate to process natural language inputs in a manner that infringes the '798 Patent.

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[11] *See, e.g.*, AMAZON DEVELOPER, *Alexa Built-In Devices*, *available at* https://developer.amazon.com/en-US/alexa/devices/alexa-built-in (last accessed February 15, 2023).

Moreover, Defendant publishes or has published information about infringing aspects of various devices. These devices include speakers, mobile devices, tablets, and other devices that are enabled by Alexa to process natural language inputs. As stated above, Defendant knew of the '798 Patent and knew that its actions would lead to infringement of that patent. Therefore, Defendant is also contributing to the direct infringement of the '798 Patent by users of Alexa-enabled products.

62.   As described by Defendant, "Alexa is the brain behind Echo—since she runs in the cloud, Alexa is always getting smarter. Just ask, and Alexa will answer questions, play music, read the news, control lights and thermostats, read Audible and Kindle books, and much more."[12]

63.   Moreover, Defendant advertises the ability of Alexa to process natural language queries. For example, "Just ask to play music, read the news, control your smart home, tell a joke, and more—Alexa will respond instantly. . . . Alexa is designed to make your life easier by letting you voice-control your world. . . . The more you talk to Alexa, the more it adapts to your speech patterns, vocabulary, and personal preferences."[13] Additionally, Defendant advertises how to use Alexa on Alexa-enabled devices, including, but not limited to Echo devices. Defendant advertises that Alexa is available on the Echo family of devices. Defendant also advertises the natural language processing capability of Alexa-enabled devices manufactured and

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[12] *See, e.g.*, AMAZON.EU, *Amazon Introduces Alexa and Echo, Echo Dot, and Echo Spot in France* (June 06, 2018), *available at* https://www.aboutamazon.eu/news/press-lounge/amazon-introduces-alexa-and-echo-echo-dot-and-echo-spot-in-france (last accessed February 15, 2023).

[13] *See, e.g.*, AMAZON, *Amazon Echo and Alexa Devices*, *available at* https://www.amazon.com/Amazon-Echo-And-Alexa-Devices/b?ie=UTF8&node=9818047011 (last accessed February 15, 2023).

sold by third parties, "You can now talk to Alexa on a growing number of products built by the brands you know and love."[14]

64.   Amazon-enabled devices process natural language inputs by at least receiving a natural language input; providing from said natural language input a plurality of language-based database objects; identifying a finite number of permutations of the plurality of database objects, the database objects being stored in a metadata database comprising at least one of a group of information comprising case information, keywords, information models, and database values; and interpreting at least one of the permutations to provide determinations of a result of the natural language input.

65.   Plaintiffs have suffered damages and irreparable harm as a result of Amazon's infringement.

JURY DEMAND

Plaintiffs hereby request a trial by jury pursuant to Rule 38 of the Federal Rules of Civil Procedure.

PRAYER FOR RELIEF

Plaintiffs respectfully request this Court to enter judgment in its favor as follows:

A.   Finding that Defendant has infringed and is infringing one or more claims of the '798 Patent;

B.   Finding that Defendant's infringement of the '798 Patent has been and continues to be willful;

C.   Finding that the '798 Patent is valid and enforceable;

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[14] *See, e.g.*, AMAZON, *Alexa in Your Vehicle, available at* https://www.amazon.com/alexa-auto/b?ie=UTF8&node=17599297011 (last accessed February 15, 2023).

D.   Awarding Plaintiffs damages adequate to compensate for Defendant's past and present infringement, but in no event less than a reasonable royalty;

E.   Ordering that damages for infringement of the '798 Patent be trebled as provided for by 35 U.S.C. § 284 for Defendant's willful infringement;

F.   Finding that this case is exceptional;

G.   Awarding Plaintiffs with their attorneys' fees and costs, together with pre-judgment and post-judgment interest; and

H.   Any further relief that this Court deems just and proper.

Dated: February 21, 2023

Respectfully submitted,

s/ Annie Huang
_____
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ATTORNEYS FOR PLAINTIFFS
RENSSELAER POLYTECHNIC INSTITUTE
AND CF DYNAMIC ADVANCES LLC

<u>CERTIFICATE OF SERVICE</u>

I hereby certify that on February 21, 2023, I caused a true and correct copy of this

document to be served on all counsel of record via Electronic Case Filing ("ECF").

Dated: February 21, 2023   */s/ Annie Huang*

APPENDIX A[15]

Alexa, comprising Alexa Consumables, Alexa Conversations, Alexa for Business, Alexa In-Skill Purchase, Alexa Mobile applications, Alexa Skills Kits, and Alexa Voice Service

Amazon Comprehend and Amazon Comprehend Medical

Amazon Connect

Amazon Kendra

Amazon Lex

Amazon Web Services

Amazon iOS and Android shopping applications with Alexa capability

Amazon Music iOS and Android applications with Alexa capability

Amazon Dash Wand

Amazon Echo products, including Echo (Generations 1 through 4), Echo Auto, Echo Buds (Generations 1 and 2), Echo Connect, Echo Dot (Generations 1 through 4 and Kids' Edition), Echo Flex, Echo Frames (Generations 1 and 2), Echo Input, Echo Glow, Echo Link, Echo Look, Echo Plus (Generations 1 and 2), Echo Show (Generations 1 and 2), Echo Show 5 (Generations 1 and 2), Echo Show 8 (Generations 1 and 2), Echo Show 10 (Generation 3), Echo Spot, and Echo Studio

Amazon Fire TV products, including Fire TV (Generation 2), Fire TV Cube (Generations 1 and 2), Fire TV Stick (Generations 1 through 3), Fire TV Stick 4K, and Fire TV Stick Lite

Amazon Kindle Fire/Fire Tablets, including Fire HD 6 and 7 (Generation 5), Fire 7, HD 8, and HD 10 (Generation 5), Fire HD 8 (Generation 6), Fire 7 and HD 8 (Generation 7), Fire HD 8 (Generation 8), Fire 7 and HD 10 (Generation 9), Fire HD 8 and HD 8 Plus (Generation 10), and Fire HD 10 and HD 10 Plus (Generation 11)

Amazon Tap

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[15] Including the Alexa-enabled products offered at https://www.amazon.com/b?ie=UTF8&node=15443147011 (last accessed February 15, 2023).