

## PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1  
 Stylesheet Version v1.2

EPAS ID: PAT4220446

<b>SUBMISSION TYPE:</b>	NEW ASSIGNMENT	
<b>NATURE OF CONVEYANCE:</b>	ASSIGNMENT	
<b>CONVEYING PARTY DATA</b>		
	<b>Name</b>	<b>Execution Date</b>
	ALAN CARLIN	01/09/2017
<b>RECEIVING PARTY DATA</b>		
<b>Name:</b>	APTIMA, INC.	
<b>Street Address:</b>	12 GILL STREET	
<b>Internal Address:</b>	SUITE 1400	
<b>City:</b>	WOBURN	
<b>State/Country:</b>	MASSACHUSETTS	
<b>Postal Code:</b>	01801	
<b>PROPERTY NUMBERS Total: 1</b>		
	<b>Property Type</b>	<b>Number</b>
	Application Number:	15395574
<b>CORRESPONDENCE DATA</b>		
<b>Fax Number:</b>	(781)935-4385	
<i>Correspondence will be sent to the e-mail address first; if that is unsuccessful, it will be sent using a fax number, if provided; if that is unsuccessful, it will be sent via US Mail.</i>		
<b>Phone:</b>	781-496-3966	
<b>Email:</b>	patent@aptima.com	
<b>Correspondent Name:</b>	APTIMA, INC. / JAY BROOKS	
<b>Address Line 1:</b>	12 GILL STREET	
<b>Address Line 2:</b>	SUITE 1400	
<b>Address Line 4:</b>	WOBURN, MASSACHUSETTS 01801	
<b>ATTORNEY DOCKET NUMBER:</b>	APT11504PPPU	
<b>NAME OF SUBMITTER:</b>	RACHEL BURRISS	
<b>SIGNATURE:</b>	/RACHEL BURRISS/	
<b>DATE SIGNED:</b>	01/11/2017	
<b>Total Attachments: 4</b>		
source=APT11504PPPU_AssignCarlintoAptima_Signed.doc#page1.tif		
source=APT11504PPPU_AssignCarlintoAptima_Signed.doc#page2.tif		
source=APT11504PPPU_AssignCarlintoAptima_Signed.doc#page3.tif		
source=APT11504PPPU_AssignCarlintoAptima_Signed.doc#page4.tif		

## PATENT APPLICATION ASSIGNMENT

Whereas I, the undersigned, ALAN CARLIN, hereby have made certain inventions or discoveries (or both) set forth in an application for Letters Patent with the United States of America and/or the International Bureau of the World Intellectual Property Organization entitled MACHINE LEARNING SYSTEM FOR A TRAINING MODEL OF AN ADAPTIVE TRAINER, identified as Attorney Docket No. APTII504PPPU, and which application was filed on December 30<sup>th</sup>, 2016 with a U.S. Patent Application Ser. No. 15/395,574; a draft of an Abstract of the inventions or discoveries is included at Attachment A.

Whereas APTIMA, INC, a MASSACHUSETTS CORPORATION having a place of business at 12 GILL STREET, SUITE 1400, WOBURN, MA 01801, and which, together with its successors and assigns, is hereinafter called "Assignee," is desirous of acquiring the title, rights, benefits and privileges hereinafter recited;

Now, therefore, for valuable consideration furnished by Assignee to me, receipt and sufficiency of which we hereby acknowledge, and for other good and valuable consideration, I hereby, without reservation:

1. As a named inventor of the above identified application, I hereby declare that: the above-identified application was made or authorized to be made by me; I believe I am the original inventor or an original joint inventor of a claimed invention in the application; I hereby acknowledge that any willful false statement made by this declaration is punishable under 18 U.S.C. 1001 by fine or imprisonment of not more than five (5) years, or both; and recognize the Assignee as a real party in interest in the application;
2. Assign, transfer and convey to Assignee the entire right, title and interest in and to said inventions and discoveries, said application for Letters Patent of the United States of America, any and all other applications for Letters Patent on said inventions and discoveries in whatsoever countries, including all non-provisional, divisional, renewal, substitute, continuation, reissue, re-examination and Convention applications based in whole or in part upon said inventions or discoveries, or upon said applications, and any and all Letters Patent, reissues, reexaminations, and extensions of Letters Patent granted for said inventions and discoveries or upon said applications, and every priority right that is or may be predicated upon or arise from said inventions, said discoveries, said applications and said Letters Patent and any provisional applications from which priority is claimed in said Letters Patent;
3. Appoint Assignee as an attorney-in-fact and Authorize Assignee to execute and file all necessary document, including making substitute statements, for filing and/or prosecuting patent applications in any or all countries on any or all of said inventions and discoveries in my name or in the name of Assignee or otherwise as Assignee may deem advisable, under the International

Init.: AC

Convention or otherwise;

4. Authorize and request the Commissioner of Patents and Trademarks of the United States of America and the empowered officials of all other governments to issue or transfer all said Letters Patent to Assignee, as assignee of the entire right, title and interest therein or otherwise as Assignee may direct;

5. Warrant that I/we have not knowingly conveyed to others any right in said inventions, discoveries, applications or patents or any license to use the same or to make, use or sell anything embodying or utilizing any of said inventions or discoveries; and that I have good right to assign the same to Assignee without encumbrance;

6. Bind my heirs, legal representatives and assigns, as well as myself, to do, upon Assignee's request and at Assignee's expense, but without additional consideration to me or them, all acts reasonably serving to assure that the said inventions and discoveries, the said patent applications and the said Letters Patent shall be held and enjoyed by Assignee as fully and entirely as the same could have been held and enjoyed by me, my heirs, legal representatives and assigns if this assignment had not been made; and particularly to execute and deliver to Assignee all lawful application documents including petitions, specifications, and oaths, and all assignments, disclaimers, and lawful affidavits in form and substance as may be requested by Assignee; to communicate to Assignee all facts known to me relating to said inventions and discoveries or the history thereof; and to furnish Assignee with any and all documents, photographs, models, samples and other physical exhibits in my control or in the control of my heirs, legal representatives or assigns which may be useful for establishing the facts of my conceptions, disclosures, and reduction to practice of said inventions and discoveries.

In testimony of which we have each executed this Assignment on the date indicated above each of our respective names.

Dated 1/9/17

  
\_\_\_\_\_  
Signature

Alan Carlin  
20 Farnsworth Ave  
Waltham, MA 02451  
Residential Address

acarlin@aptima.com  
Email

Init.: AC

## ATTACHMENT A

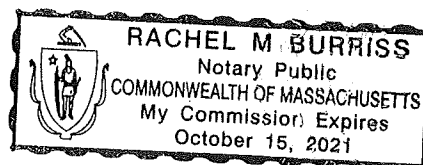
### DRAFT OF ABSTRACT:

In one embodiment of the invention, a training model for students is provided that models how to present training items to students in a computer based adaptive trainer. The training model receives student performance data and uses the training model to infer underlying student skill levels throughout the training sequence. Some embodiments of the training model also comprise machine learning techniques that allow the training model to adapt to changes in students skills as the student performs on training items presented by the training model. Furthermore, the training model may also be used to inform a training optimization model, or a learning model, in the form of a Partially Observable Markov Decision Process (POMDP).

Init.: AC

On this 9 day of JANUARY, 2017, before me, the undersigned notary public, personally appeared ALAN CARLIN, proved to me through satisfactory evidence of identification, which were MA DRIVERS LICENSE, to be the person whose name is signed on the preceding or attached document, in my presence.

Rachel M. Burriss



Init.: AC