PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1 Stylesheet Version v1.2 EPAS ID: PAT2774699

SUBMISSION TYPE:	NEW ASSIGNMENT
NATURE OF CONVEYANCE:	ASSIGNMENT

CONVEYING PARTY DATA

Name	Execution Date
CRAIG BOUTILIER	08/31/2012
TYLER LU	08/31/2012

RECEIVING PARTY DATA

Name:	THE GOVERNING COUNCIL OF THE UNIVERSITY OF TORONTO
Street Address:	100 COLLEGE STREET, ROOM 413
Internal Address:	BANTING INSTITUTE
City:	TORONTO
State/Country:	CANADA
Postal Code:	M5G 1L5

PROPERTY NUMBERS Total: 3

Property Type	Number
Application Number:	14001972
Application Number:	14001984
Application Number:	14001991

CORRESPONDENCE DATA

Fax Number: (416)216-3930

Correspondence will be sent to the e-mail address first; if that is unsuccessful, it will be sent via

US Mail.

Phone: 4162164823

Email: liliana.arangio@nortonrosefulbright.com
Correspondent Name: NORTON ROSE FULBRIGHT LLP

Address Line 1: 200 BAY STREET, SUITE 3800

Address Line 2: ROYAL BANK PLAZA, SOUTH TOWER

Address Line 4: TORONTO, CANADA M5J 2Z4

ATTORNEY DOCKET NUMBER:	55812346-1US/2US/3US
NAME OF SUBMITTER:	MAYA MEDEIROS
SIGNATURE:	/MayaMedeiros/
DATE SIGNED:	03/19/2014

Total Attachments: 49

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ASSIGNMENT OF RIGHTS AGREEMENT

THIS ASSIGNMENT OF RIGHTS AGREEMENT (the "Agreement") is made the 31st day of August, 2012 (the "Effective Date") between THE GOVERNING COUNCIL OF THE UNIVERSITY OF TORONTO, a corporation vested with the government, management and control of the University of Toronto by the *University of Toronto Act, 1971* and having offices at Banting Institute, 100 College Street, Room 413, Toronto, Ontario, M5G 1L5, Canada, its successors and assigns (collectively, the "University") and GRANATA DECISION SYSTEMS INC., a corporation incorporated under the laws of Ontario having its registered address at MaRS Centre, South Tower, 101 College Street, Suite 402 Toronto, ON M5G 1L7, its successors and assigns (collectively, the "Assignee").

WHEREAS, Inventors, while employed by the University of Toronto, made an Invention (as hereinafter defined);

WHEREAS, Inventors assigned all of their rights, title and interest in and to the Inventions to the University by way of four (4) assignment agreements, two (2) dated May 12th, 2011 and two (2) dated May 24th, 2011 attached hereto as <u>Schedule B</u>; and

WHEREAS, subject to the terms and conditions of this Agreement, the University is desirous of assigning its right, title and interest in and to the Invention, the Intellectual Property Rights and the Technology (as such terms are defined herein) to the Assignee.

NOW THEREFORE THE PARTIES HERETO AGREE AS FOLLOWS:

1. <u>Definitions</u>

The following terms have the following meanings in this Agreement:

- (a) "Assigned Assets" means the Invention, Intellectual Property Rights and the Technology collectively;
- (b) "Hardware" means the hardware (if any) specified in Schedule D;
- (c) "Intellectual Property Rights" means all Patents, copyrights, trade names and other intellectual property rights, whether registered or not, owned by the University related to the Invention as specified in Schedule A;
- (d)"Invention" means collectively: (i) the "Model and Algorithms for Consensus Decision Making in the Presence of Option Uncertainty", (ii) "Models and Algorithms for Consensus Decision Making under Budget Constraints", (iii) "Model and Algorithms for Optimization Group Decisions with Incomplete Preferences, and Intelligent Elicitation of Partial Preferences", and (iv) "Algorithms for Learning Preference Distributions from Choice"

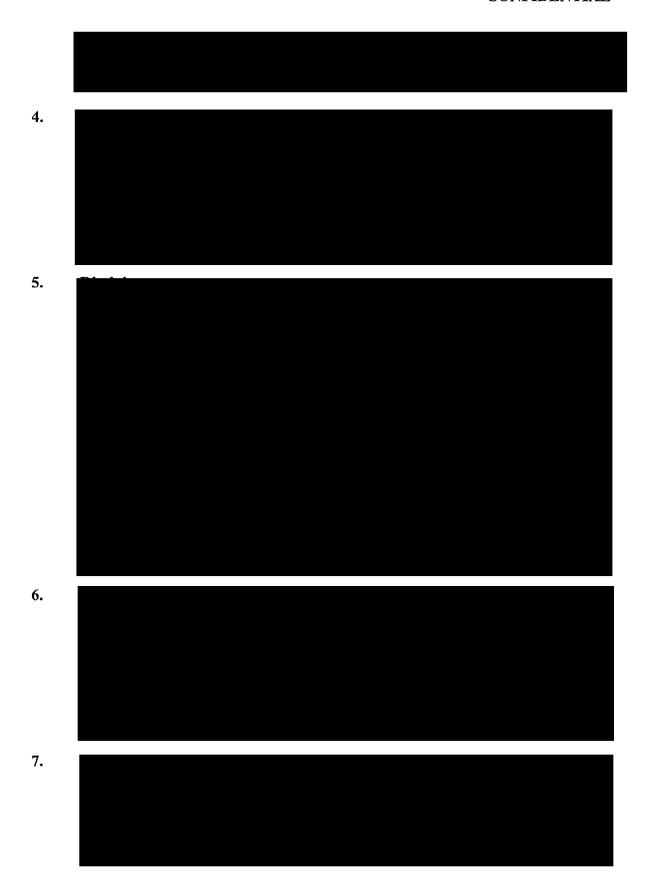
Data", as further described in the University of Toronto Confidential Intellectual Property Disclosure respectively attached hereto as <u>Schedule A</u>, but does not include any improvements, enhancements, derivatives or other modifications thereto created after the Effective Date of this Agreement;

- (e) "Inventors" means Craig Boutilier and Tyler Lu collectively;
- (f) "Know-how" means any and all trade secrets, technical expertise, knowledge, confidential information and know-how, whether patentable or unpatentable relating to the Invention, whether in written, machine readable, drawing or oral form, including, without limiting the generality of the foregoing, all technical information, raw material, data, product specifications, processes and designs, operating and production data, calculations, computer programs, instructions and techniques, quality control and other standards, and drawings relating thereto developed by the University or the Inventors and which exists as at the Effective Date;
- (g) "Parties" means the University and the Assignee collectively, and "Party" means any one of them;
- (h) "Patents" means the patents and/or patent applications listed in Schedule C attached hereto, and shall include any divisional, re-examination or renewal based on the said patents and/or patent applications, any patents which may issue on, from or as a result of any of the foregoing and any reissue of said patents;
- (i) "Software" means the software specified in Schedule D;
- (j) "Technology" means the Hardware, Software and all Know-how (if any), as specified in Schedule D.

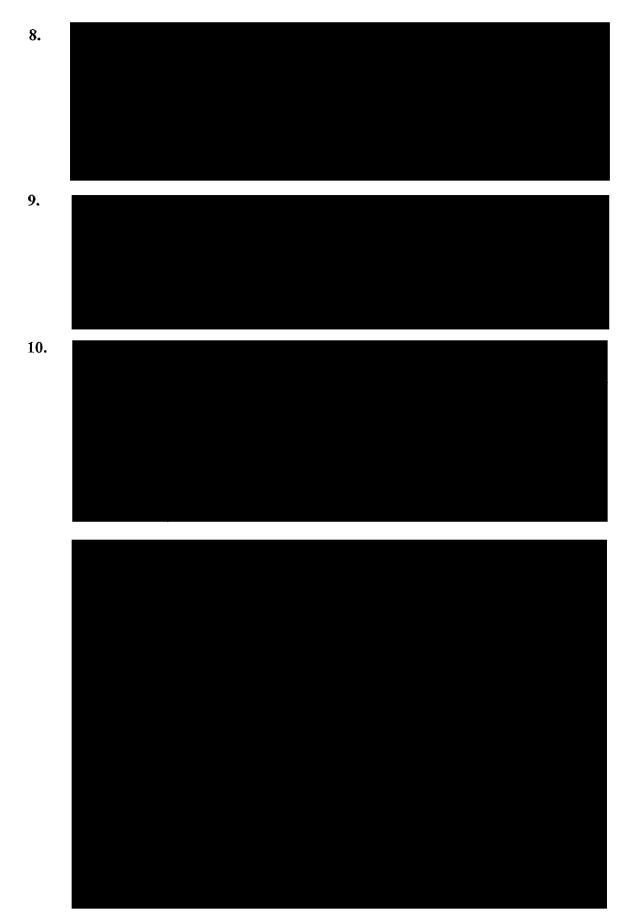
2. Assignment of Rights

Subject to the terms of this Agreement, the University hereby assigns to the Assignee all right, title and interest, whatever the same may be (but without any representation or warranty as to the nature, extent or validity thereof), that the University has or may in the future have in and to the Assigned Assets, including without limitation, the right to apply for patents in every country, the right to receive any letters patent that may issue from any such applications and the right to sell or license the Assigned Assets.

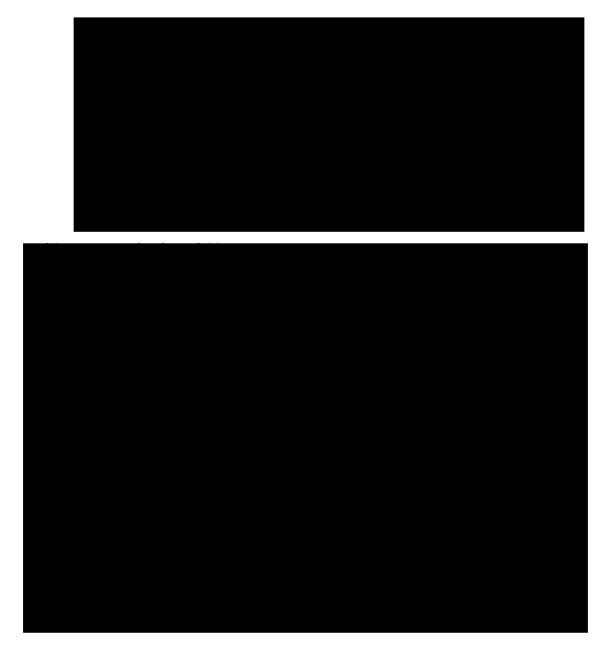
CONFIDENTIAL



- 3 -



-4-



Miscellaneous



- 5 -



IN WITNESS WHEREOF, the Parties have caused this Agreement to be executed as of the Effective Date.

THE GOVERNING COUNCIL OF THE UNIVERSITY OF TORONTO

Jennifer Fraser

Director, Business Development and Commercialization Director, Operations Innovations & Partnerships Office

University of Toronto

GRANATA DECISIÓN SYSTEMS INC.

Per: _____

Name: Craig Boutilier

Title: CTC

Per:

Name: Tyler Lu Title: CEO

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SCHEDULE A

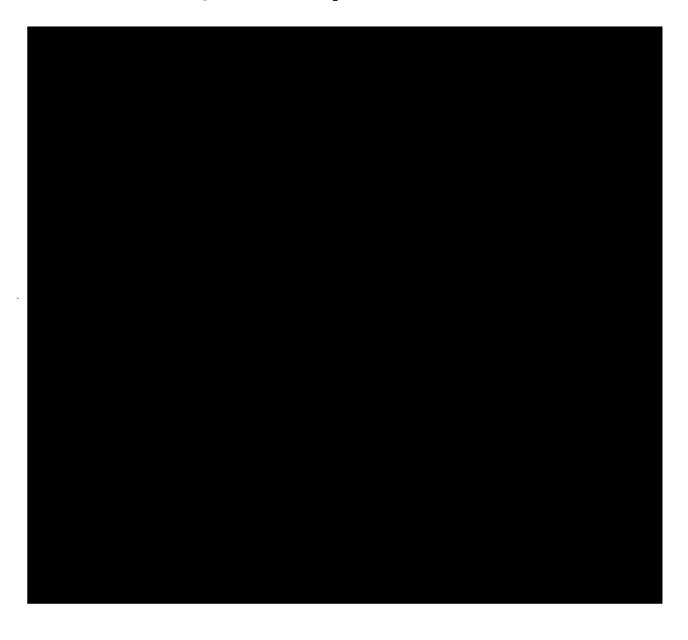
UNIVERSITY OF TORONTO CONFIDENTIAL INTELLECTUAL PROPERTY DISCLOSURES

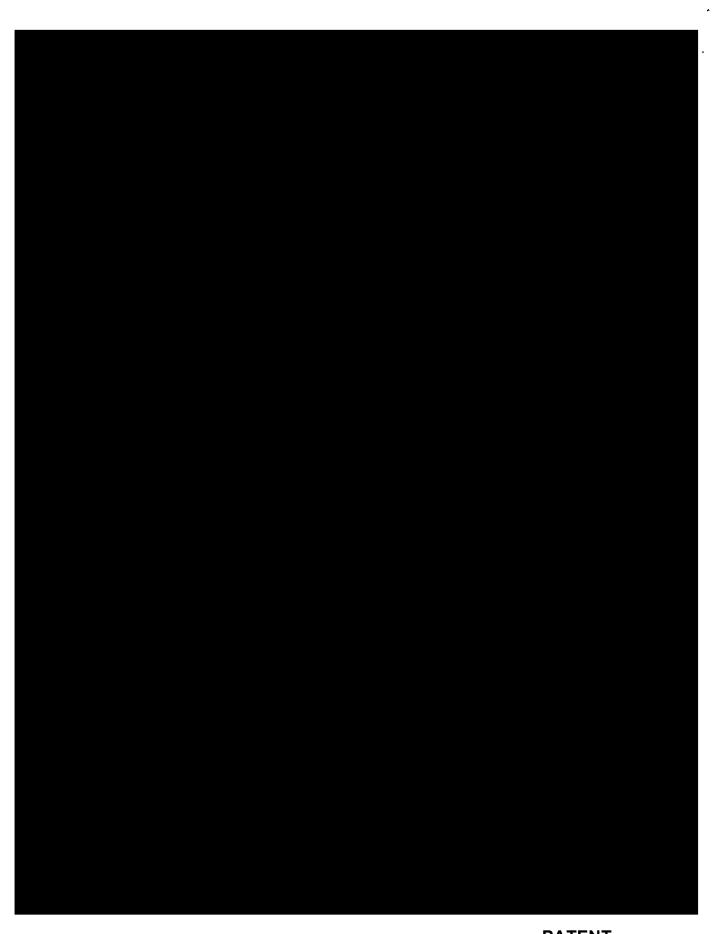


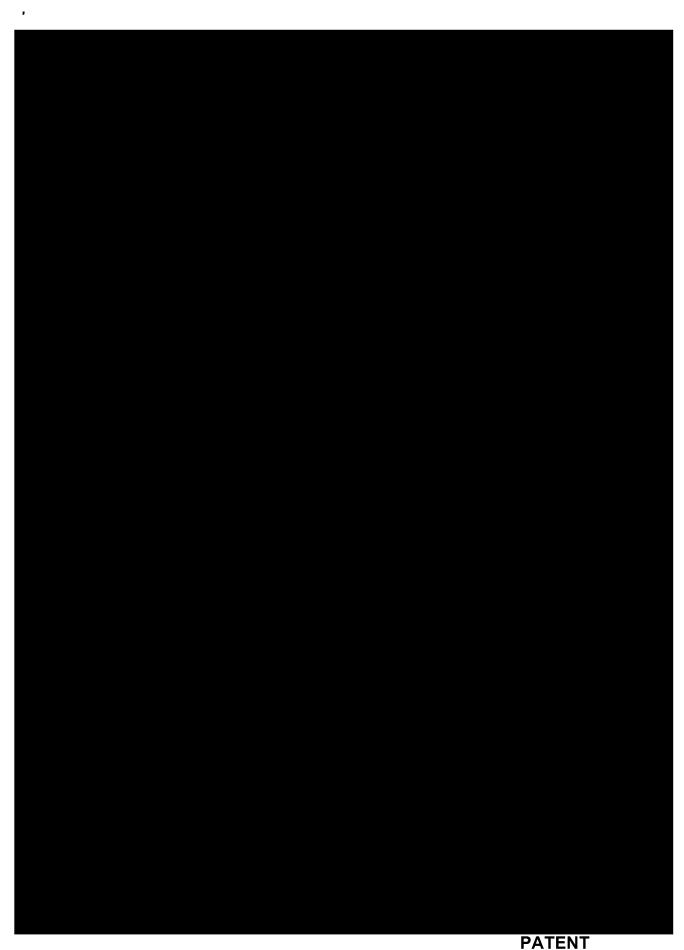
UNIVERSITY OF TORONTO CONFIDENTIAL INTELLECTUAL PROPERTY DISCLOSURE

MaRS Centre Heritage Building, Suite 320 101 College Street, Toronto, ON M5G 1L7 Tel: (416) 978-7833 Fax: (416) 978-5821 email: ip.officer@utoronto.ca

1. Title of Invention: Algorithms for Learning Preference Distributions from Choice Data







Signature Typed Name: Craig	— Feb. 2, 2011 Date Bathlier	Signature Typed Name: Tian	Feb. 2, 2011 Date
Signature Typed Name:	Date	Signature Typed Name:	Date

APPENDIX 2



APPENDIX 2

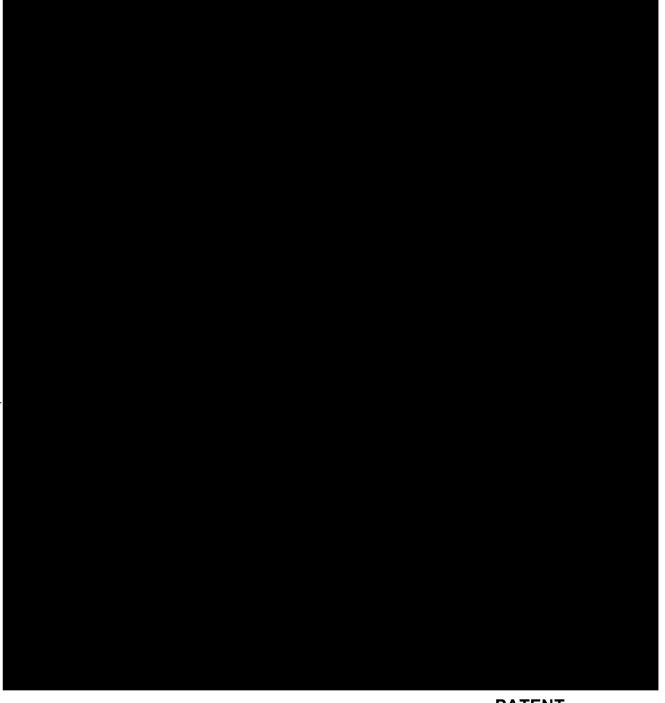


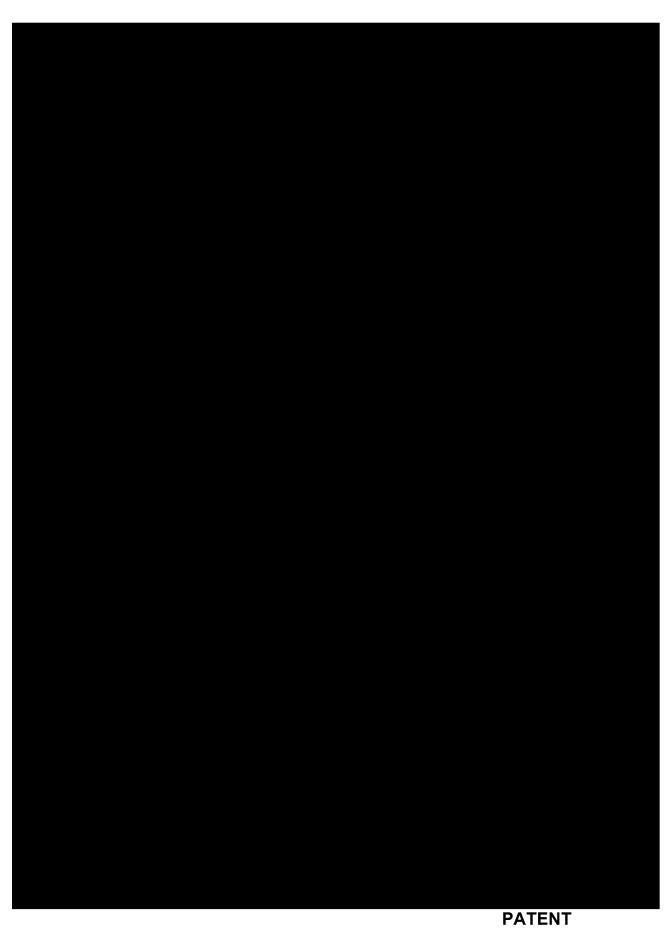


UNIVERSITY OF TORONTO CONFIDENTIAL INTELLECTUAL PROPERTY DISCLOSURE

MaRS Centre Heritage Building, Suite 320 101 College Street, Toronto, ON M5G 1L7 Tel: (416) 978-7833 Fax: (416) 978-5821 email: ip.officer@utoronto.ca

1. Title of Invention: Model and Algorithms for Consensus Decision Making in the Presence of Option Uncertainty







7. Warranty:

I/We, the Inventors listed in Section 2(a), have read, understood and agree to all of the preceding, and declare that all of the information provided in this disclosure is complete and correct. To the best of our knowledge, all persons who might legally make an ownership claim in this/invention are identified in Section 2(a) and 2(b).

Signature Date

Typed Name: Craig Boutilier

Signature

Typed Name: Tyler Lu

July 5, 2010

Date



UNIVERSITY OF TORONTO REQUEST FOR PERSONAL ASSIGNMENT OF INVENTION

MaRS Centre Heritage Building, Suite 320 101 College Street, Toronto, ON M5G 1L7

Tel: (416) 978-7833 Fax: (416) 978-5821 email: ip.officer@utoronto.ca

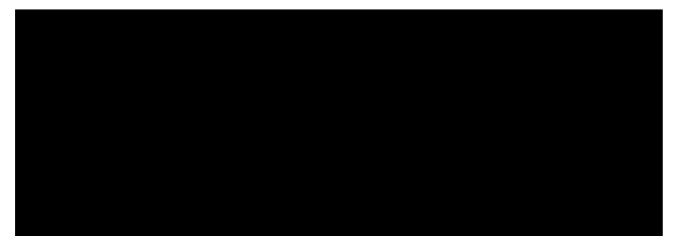


RE: Title of Invention: Model and Algorithms for Consensus Decision Making in the

Presence of Option Uncertainty I/We, the Inventors of the above noted Invention wish to take personal ownership of the above noted invention in accordance with section 4.2 of the University of Toronto Inventions Policy. July 5, 2010 July 5, 2010 Signature Date Signature Date Type Name: Craig Boutilier Typed Name: Tyler Lu Signature

Date Signature Date Typed Name: Typed Name:

APPENDIX 2



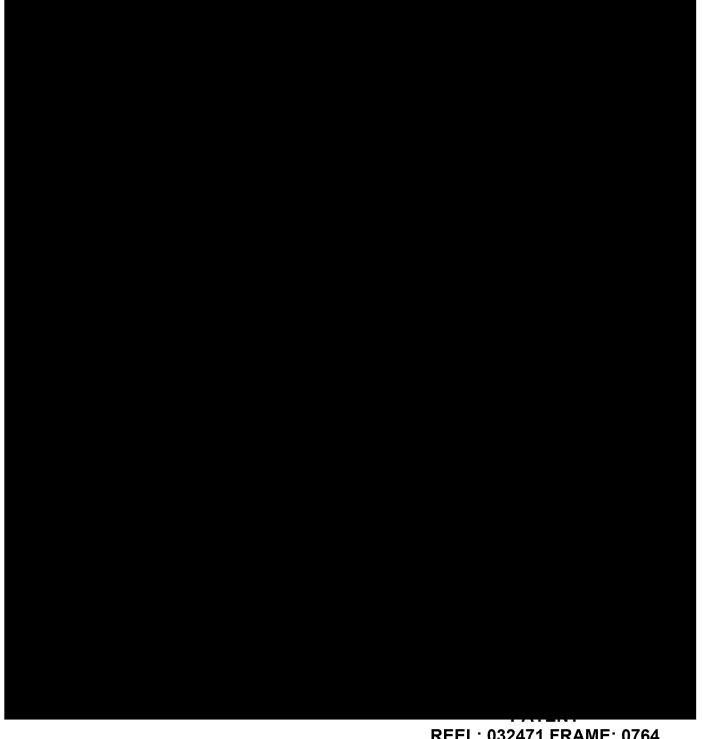


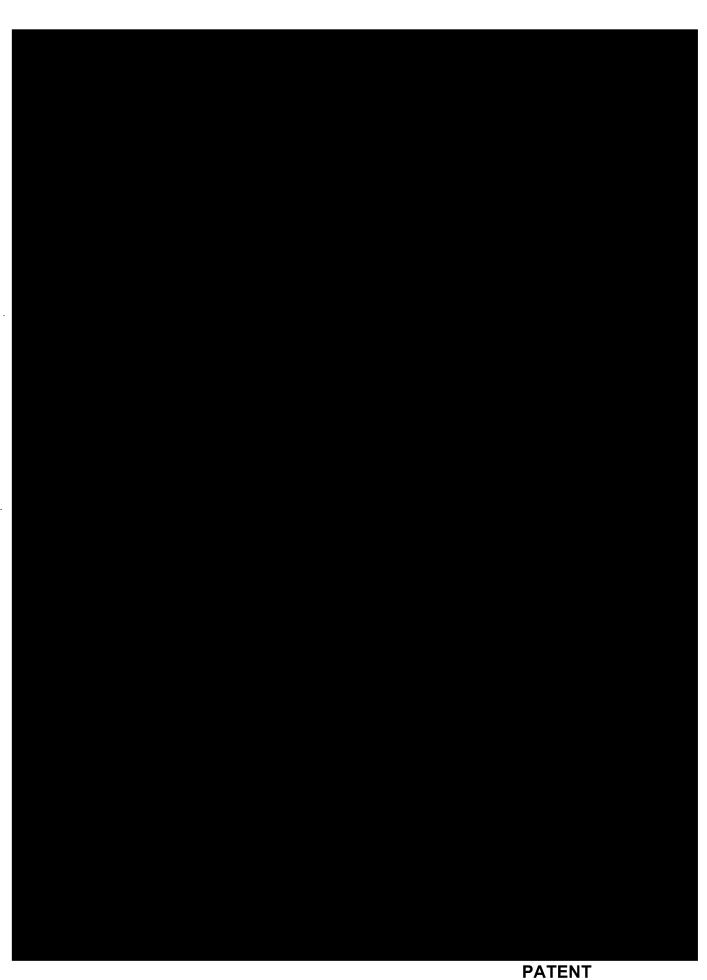
UNIVERSITY OF TORONTO CONFIDENTIAL INTELLECTUAL PROPERTY DISCLOSURE

MaRS Centre Heritage Building, Suite 320 101 College Street, Toronto, ON M5G 1L7

Tel: (416) 978-7833 Fax: (416) 978-5821email: ip.officer@utoronto.ca

1. Title of Invention: Model and Algorithms for Optimization Group Decisions with Incomplete Preferences, and Intelligent Elicitation of Partial Preferences







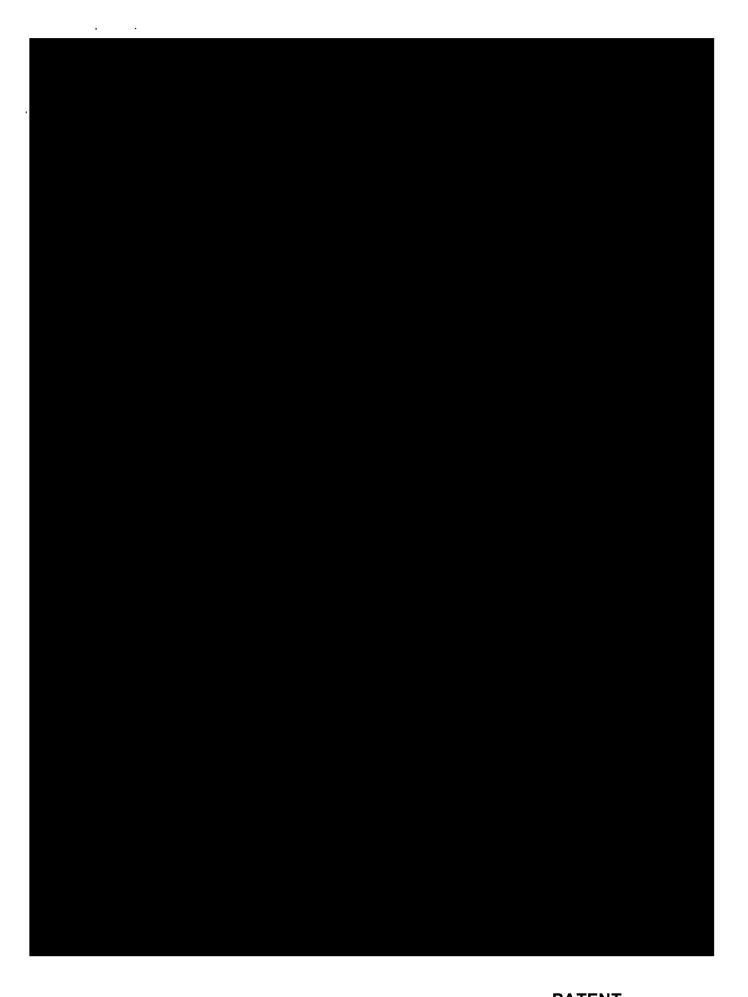
7. Warranty:

I/We, the Inventors listed in Section 2(a), have read, understood and agree to all of the preceding, and declare that all of the information provided in this disclosure is complete and correct. To the best of our knowledge, all persons who might legally make an ownership claim in this Invention are identified in Section 2(a) and 2(b).

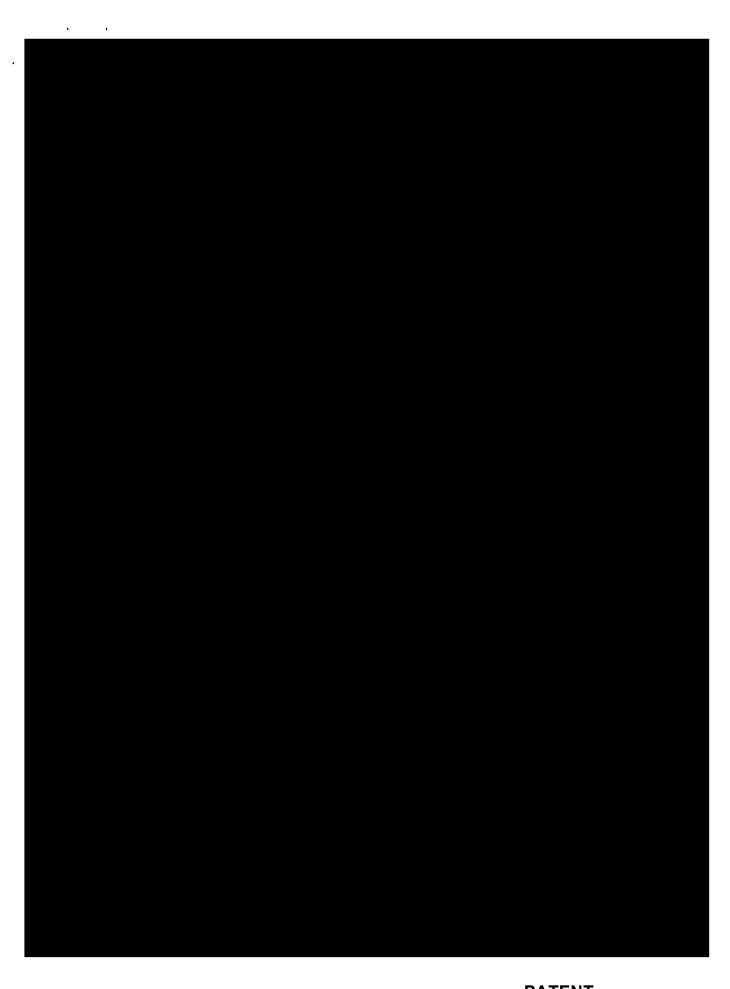
Jan. 25, 2011
Signature Date
Typed Name: Craig Boutilier Typed Name: Tian (Tyler) Lu

Signature Date Signature Date Typed Name: Typed Name:

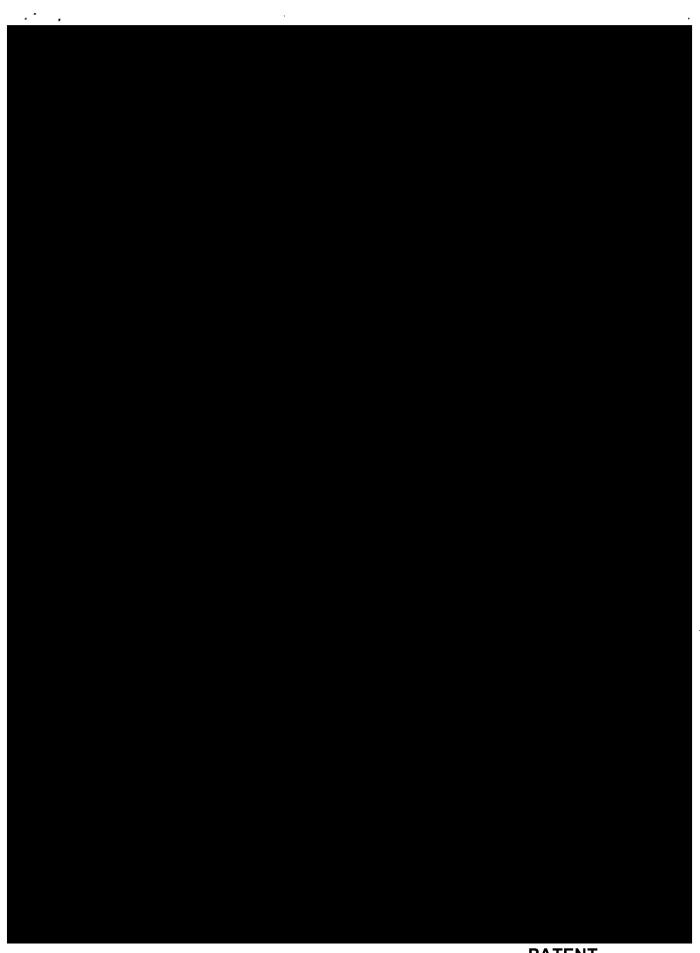
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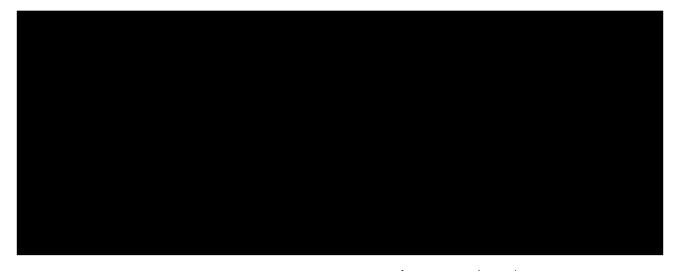


PATENT





APPENDIX 2



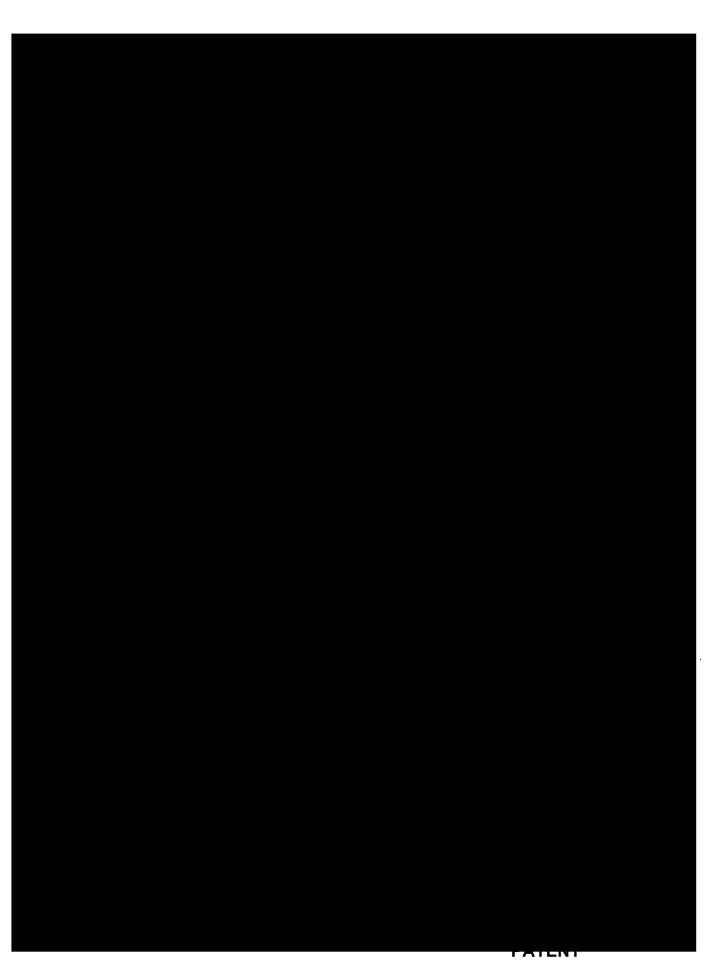


UNIVERSITY OF TORONTO CONFIDENTIAL INTELLECTUAL PROPERTY DISCLOSURE

MaRS Centre Heritage Building, Suite 320 101 College Street, Toronto, ON M5G 1L7
Tel: (416) 978-7833 Fax: (416) 978-5821 email: ip.officer@utoronto.ca

1. Title of Invention: Models and Algorithms for Consensus Decision Making under **Budget Constraints**

PATENT



. 7.	Warranty:
	I/We, the Inventors listed in Section 2(a), have read, understood and agree to all of the
	preceding, and declare that all of the information provided in this disclosure is complete and correct. To the best of our knowledge, all persons who might legally make an ownership
	claim in this Invention are identified in Section 2(a) and 2(b).
	July 5, 2010

PATENT

APPENDIX 2



CONFIDENTIAL

SCHEDULE B

ASSIGNMENT OF RIGHTS FROM THE INVENTORS TO THE UNIVERSITY



ASSIGNMENT TO THE UNIVERSITY AND REVENUE SHARING AGREEMENT

This assignment and revenue sharing agreement (the "Agreement") is between Craig Boutilier, Tyler Lu, their respective heirs, executors, administrators and assigns (collectively, the "Inventor") and The Governing Council of the University of Toronto, its successors and assigns (collectively, the "University").

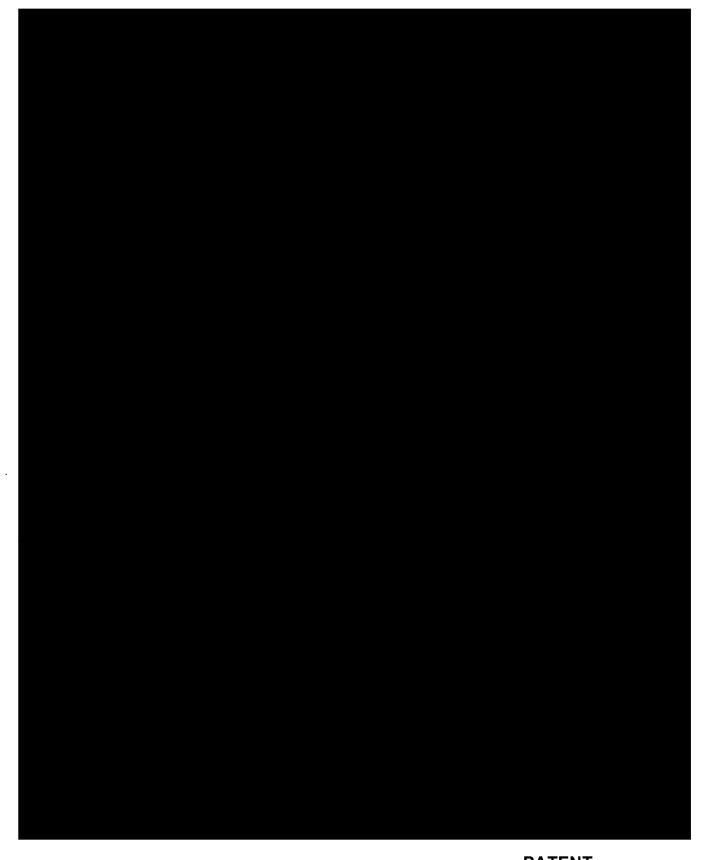
WHEREAS, the Inventor has created certain intellectual property entitled "Algorithms for Learning Preference Distributions from Choice Data" as more particularly described in the disclosure form attached as <u>Appendix 1</u> (the "Invention") and the Inventor holds certain rights in the Invention under the University's *Inventions Policy* (the "Policy", including any successor policy thereto);

AND WHEREAS, to facilitate the commercialization of the Invention, the Inventor wishes to assign the Invention to the University;

NOW THEREFORE this Agreement witnesses that in consideration of the mutual covenants contained herein and other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged by each of the parties, the parties covenant and agree as follows:



2. Assignment. The Inventor hereby assigns to the University all right, title and interest, whatever the same may be (but without any representation or warranty as to the nature, extent or validity thereof) which the Inventor now has or may in the future have in the Invention, including, without limitation, the right to apply for patents in Canada, the United States of America and any other



Executed at Toronto, Ontario this 12th day of Thuy

20/11 (the "Effective Date")

Witness

· Craig/Boutilier

Inventor,

Tyler Lu

The Governing Council of the University of Toronto

Peter Lewis, PhD

Associate Vice President, Research

Louis R. Charpentier

Secretary

PATENT

REEL: 032471 FRAME: 0782



ASSIGNMENT TO THE UNIVERSITY AND REVENUE SHARING AGREEMENT

This assignment and revenue sharing agreement (the "Agreement") is between Craig Boutilier, Tyler Lu, their respective heirs, executors, administrators and assigns (collectively, the "Inventor") and The Governing Council of the University of Toronto, its successors and assigns (collectively, the "University").

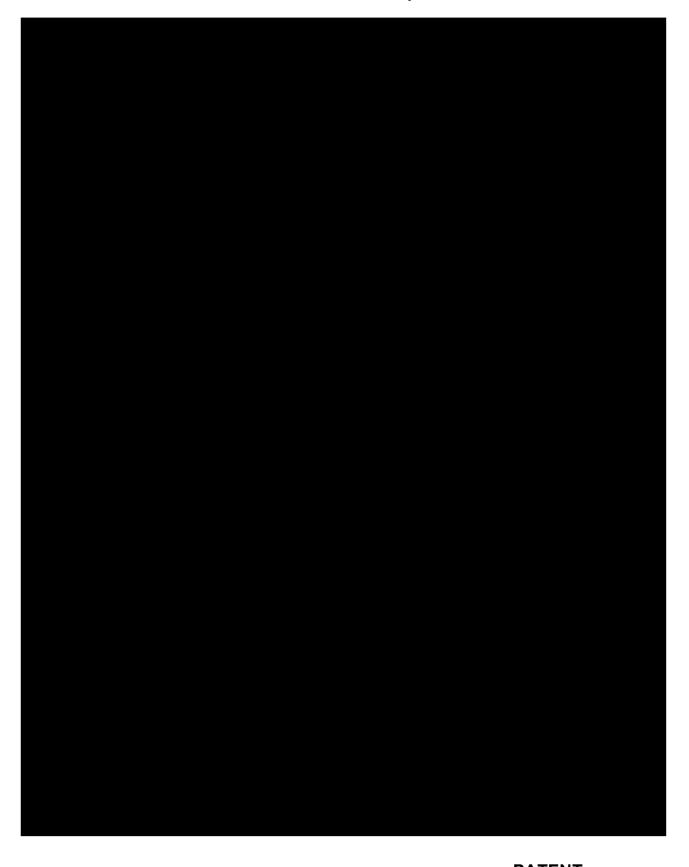
WHEREAS, the Inventor has created certain intellectual property entitled "Model and Algorithms for Consensus Decision Making in the Presence of Option Uncertainty" as more particularly described in the disclosure form attached as <u>Appendix 1</u> (the "Invention") and the Inventor holds certain rights in the Invention under the University's *Inventions Policy* (the "Policy", including any successor policy thereto):

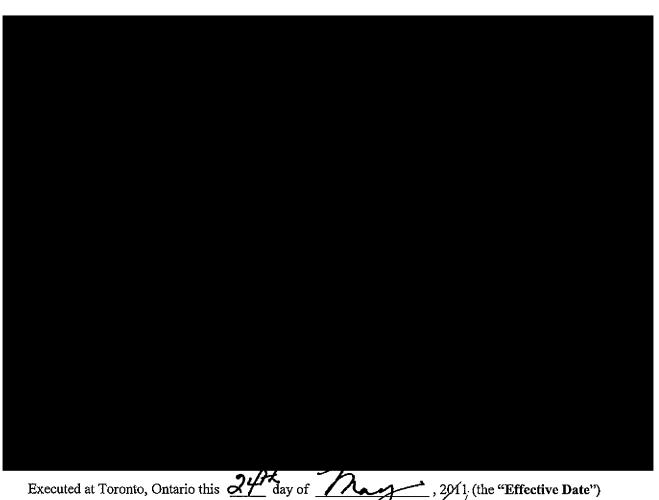
AND WHEREAS, to facilitate the commercialization of the Invention, the Inventor wishes to assign the Invention to the University;

NOW THEREFORE this Agreement witnesses that in consideration of the mutual covenants contained herein and other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged by each of the parties, the parties covenant and agree as follows:



2. Assignment. The Inventor hereby assigns to the University all right, title and interest, whatever the same may be (but without any representation or warranty as to the nature, extent or validity thereof) which the Inventor now has or may in the future have in the Invention, including, without limitation, the right to apply for patents in Canada, the United States of America and any other





2011; (the "Effective Date")

Witness

 \cdot \cdot \cdot \cdot \cdot \cdot

Craig/Boutilier

Inventor

Tyler Lu

The Governing Council of the University of Toronto

Peter Lewis, PhD

Associate Vice President, Research

Louis R. Charpentier

Secretary



ASSIGNMENT TO THE UNIVERSITY AND REVENUE SHARING AGREEMENT

This assignment and revenue sharing agreement (the "Agreement") is between Craig Boutilier, Tyler Lu, their respective heirs, executors, administrators and assigns (collectively, the "Inventor") and The Governing Council of the University of Toronto, its successors and assigns (collectively, the "University").

WHEREAS, the Inventor has created certain intellectual property entitled "Model and Algorithms for Optimization Group Decisions with Incomplete Preferences, and Intelligent Elicitation of Partial Preferences" as more particularly described in the disclosure form attached as <u>Appendix 1</u> (the "Invention") and the Inventor holds certain rights in the Invention under the University's *Inventions Policy* (the "Policy", including any successor policy thereto);

AND WHEREAS, to facilitate the commercialization of the Invention, the Inventor wishes to assign the Invention to the University;

NOW THEREFORE this Agreement witnesses that in consideration of the mutual covenants contained herein and other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged by each of the parties, the parties covenant and agree as follows:

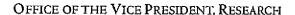


2. Assignment. The Inventor hereby assigns to the University all right, title and interest, whatever the same may be (but without any representation or warranty as to the nature, extent or validity thereof) which the Inventor now has or may in the future have in the Invention, including, without limitation, the right to apply for patents in Canada, the United States of America and any other



Executed at Toronto, Ontario this Atay of May 20/1 (the "Effective Date") Intentor Witness Craig Boutilier-Tyler Lu The Governing Council of the University of Toronto Peter Lewis, PhD Associate Vice President, Research

Secretary





ASSIGNMENT TO THE UNIVERSITY AND REVENUE SHARING AGREEMENT

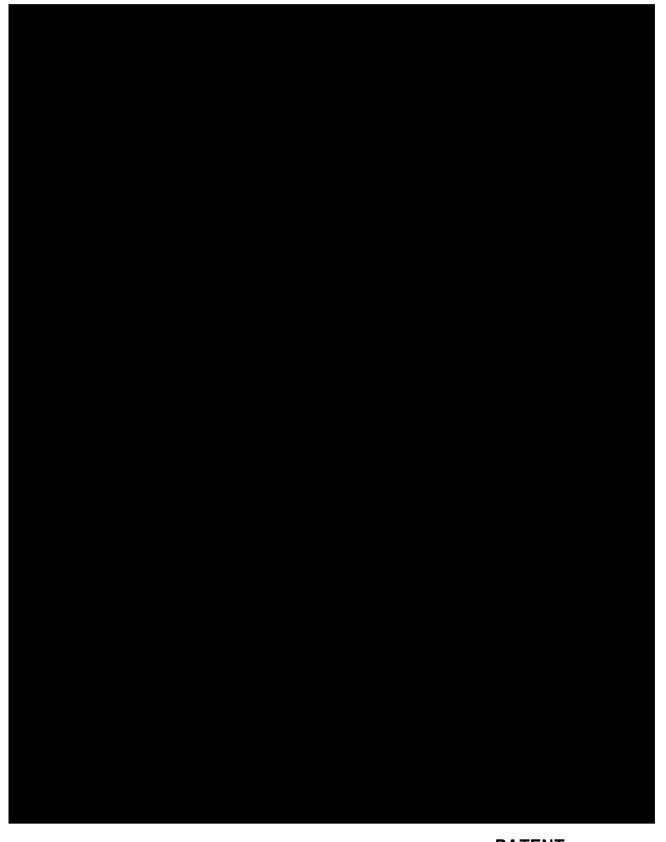
This assignment and revenue sharing agreement (the "Agreement") is between Craig Boutilier, Tyler Lu, their respective heirs, executors, administrators and assigns (collectively, the "Inventor") and The Governing Council of the University of Toronto, its successors and assigns (collectively, the "University").

WHEREAS, the Inventor has created certain intellectual property entitled "Models and Algorithms for Consensus Decision Making under Budget Constraints" as more particularly described in the disclosure form attached as <u>Appendix 1</u> (the "Invention") and the Inventor holds certain rights in the Invention under the University's *Inventions Policy* (the "Policy", including any successor policy thereto);

AND WHEREAS, to facilitate the commercialization of the Invention, the Inventor wishes to assign the Invention to the University;

NOW THEREFORE this Agreement witnesses that in consideration of the mutual covenants contained herein and other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged by each of the parties, the parties covenant and agree as follows:





Witness

Craig Boytilier

Inventor

Tyler Lu

The Governing Council of the University of Tozonto

Peter Lewis, PhD

Associate Vice President, Research

Louis R. Charpentie

Secretary

SCHEDULE C

PATENTS

Patents and/or Patent Applications: 3 US patent applications, 2 PCT applications

Country: US

Title: "System and Methods for Algorithms for Learning Mallows Models with Choice

Data"

Application No.: 61/450,286

Patent No.:

Filing Date: March 4th, 2011

Issue Date:

Country: US

Title: "Method and System for Robust Social Choices and Vote Elicitation"

Application No.: 61/449,272

Patent No.:

Filing Date: March 8th, 2011

Issue Date:

Country: US

Title: "System and method for automatic segmentation and matching customers faced

with multiple volume-based discounts"

Application No.: 61/533,479

Patent No.:

Filing Date: September 20th, 2011

Issue Date:

Country: PCT

Title: "System and method for identifying and ranking user preferences"

Application No.: PCT/CA2012/000229

Patent No.:

Filing Date: March 8th, 2011

Issue Date

Country: PCT

Title: "Method and system for robust social choices and vote elicitation"

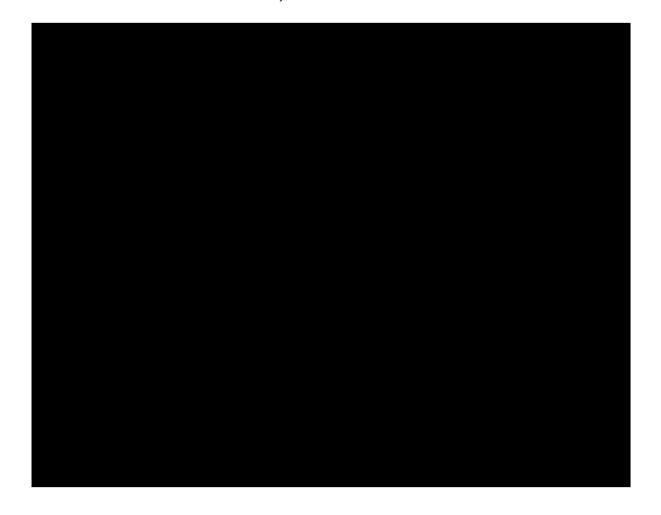
Application No.: PCT/CA2012/000226

Patent No.:

Filing Date: March 8th, 2012

Issue Date

$\label{eq:scheduled} \underline{\text{SCHEDULE D}}$ HARDWARE, SOFTWARE AND KNOW-HOW



RECORDED: 03/19/2014