Form Name: Citizens Commission
Submission Time: February 7, 2019 4:44 pm
[redacted]

Name	Glenn Iba
Address	[redacted]
Phone	[redacted]
Email	[redacted]
Citizenship Affirmation	I am a U.S. Citizen
Residency Affirmation	I am a resident of the Commonwealth of Massachusetts
Statement of Intent	I intend to comply with and advance the policy established by this Act.
Statement of Interest	I am deeply interested in "saving" our democracy. Reducing the influence of big money in our politics is one important step, and overturning Citizen's United by clarifying that "Corporations are NOT people, and do not receive the constitutional protections of citizenship" will help accomplish this. I have been actively reading in the area of recent politics, including books like "Corporations are Not People", "Who Stole the American Dream", "Democracy in Chains", and much more. I am neither a lawyer, nor a politician, but I AM a concerned citizen with a developed intellect (I have SB and SM degrees from MIT).. I'm hoping I can contribute to this Citizens Commission. Thank You! --Glenn
Résumé or Summary of Qualifications Upload	https://s3.amazonaws.com/files.formstack.com/uploads/3282862/71887710/476154639/71887710_resglenn2015.pdf
Political Party Affiliation, if any, over the previous five years	Democratic
CIty or Town where you reside	LEXINGTON
Employment Status	Unemployed

Glenn A. Iba

citizenship: U.S.

Education

1974-1979 **Massachusetts Institute of Technology - Cambridge, MA**
S.M. in Mathematics, September, 1979

Studied in an interdisciplinary Ph.D. program in artificial intelligence through the Division for Study and Research in Education at MIT. Masters Thesis titled "Learning Disjunctive Concepts from Examples". Completed all requirements for Ph.D. with exception of doctoral dissertation. Studies in mathematics, computer science, artificial intelligence, and developmental and cognitive psychology. Research centering on theories and modeling of learning processes. Extensive programming experience in LISP. Supported by a Fellowship from the Division for Study and Research in Education. Grade point average: 5.0/5.0.

1970-1974 **Massachusetts Institute of Technology - Cambridge, MA**
S.B. in Mathematics, June, 1974

Studies in mathematics, computer science, and psychology. Recipient of National Merit Scholarship sponsored by IBM Corporation. Phi Beta Kappa honorary fraternity. Grade point average: 4.9/5.0.

1969,1970 **Summer Science Training Program at Ohio State University - Columbus, OH**

Program in mathematics for exceptional high-school students, sponsored by the National Science Foundation. Studies in Number Theory, Abstract Algebra, and Automata Theory.

Experience

2001-present Fundamental research in AI and machine learning (part-time, self-funded)

Exploring basic issues in AI/ML knowledge acquisition, focusing on empirical learning from experience with an external environment, models of skill-acquisition, along with planning and problem solving. Applied heuristic techniques for learning macro-operators to developing solving, planning, and playing skills using as a testbed my Tetris-inspired puzzle game called Target Tiling.

2013-present Consultant / sub-contractor to Little Details LLC for Patchmania logic puzzle app for iOS

Designed over 1000 puzzle levels for new iOS puzzle app called Patchmania. Developed software tools for editing, analyzing, and deploying levels for inclusion in the app. Wrote a search program to solve levels which was translated into Objective C to enable the app to supply hints when requested by users. Had primary responsibility for design and organization of all levels. Patchmania launched on iTunes App Store in March, 2015, and has nearly 2 million downloads to date. A kids version called PatchmaniaKids is slated for launch in January 2016.

2011-present IBA Puzzles partnership for developing Monorail iPhone puzzle app.

Designed and developed the Monorail iPhone puzzle app in partnership with Aaron Iba. Monorail featured original puzzles based on my book Round Trip Puzzles. In addition to creating all of the puzzles, contributed extensive coding in Objective C. Monorail app was officially released in July 2011. Over 1 million downloads as of January 2012.

2010-2012 Employed part-time by ISLE (Institute for Learning), Palo Alto, CA.

Software development on Dr. Patrick Langley's ICARUS cognitive architecture. Extended and debugged modules for execution and problem solving. Modified system to integrate a new abductive inference engine.

Jan-Jul 2010 Private contractor to Arizona State University (ASU), Tempe AZ, working on cognitive architectures.

Worked for Dr. Patrick Langley on various aspects of his ICARUS cognitive architecture projects. Collaborated in redesigning and implementing a new version of ICARUS, integrating problem-solving and execution. Developed methods to enable the architecture to learn higher-level macro-operators from problem-solving/execution traces. Additional work on specifying testbed domains and tasks for comparing and evaluating different cognitive architectures.

1994-present Part-time free-lance work designing and analyzing puzzles and games.

Applied my game and puzzle expertise, along with my skills in AI/ML to the design and analysis of a variety of games and puzzles. Numerous puzzles published in puzzle magazines and calendars. Developed software tools using search techniques and constraint satisfaction for automatically generating puzzles and for analyzing number and quality of solutions. Developed many innovative puzzle ideas and contributed in various ways to several marketed puzzles, including Railroad Rush Hour and Hexdominoes. Developed and analyzed software implementations (Java applets, Javascript WebApps, and CommonLISP applications) for interactive puzzles and games which have both recreational and educational applications. Published *Round Trip Puzzles* (Sterling Publishing, January, 2011), a collection of challenging logic path puzzles.

2001-2004 MIT Lecturer in the Experimental Study Group, Cambridge, MA.

Taught introductory Calculus, Fall 2001. Taught an IAP Seminar on Machine Learning by Discovering Macro-Operators, January 2002. Taught an undergraduate research seminar on Skill Development in Humans and Computers, Spring 2002. Supervised three UROP (Undergraduate Research Opportunity Program) student projects during Spring and Summer 2002. Taught single and multi-variable Calculus during the 2002-2003 and 2003-2004 academic years.

2001-2003 Volunteer teacher of 4th and 5th grade Math Olympiads, Estabrook Elementary School, Lexington, MA.

Worked with approximately 25 students as part of the Estabrook 4th and 5th Grade Math Olympiad team. Taught mathematics and problem-solving skills, and helped students prepare for the competitive exams given as part of the National Math Olympiad program.

2000-2001 Visiting Scholar in the Experimental Study Group (ESG) at MIT, Cambridge, MA.

Taught seminar on Mathematics and Puzzle Challenges in the Tetris Target Video Game, January, 2001. Was involved in ESG study groups such as Godel, Escher, Bach; MIDI music, Special Topics in Mathematics. Served as alumni mentor to two ESG freshmen.

1999-2002 President of Experimental Study Group Alumni Network (ESGAN) as part of the ESG program at MIT, Cambridge, MA.

Led alumni outreach activities for ESG, including fund-raising, reunions, monthly Alumni Nights. Started an alumni mentoring program to match local ESG alums with current ESG freshman. Worked on ESGAN web pages, and an ESG Alumni Directory.

1997-1998 Senior Software Developer, Gensym Corp., Cambridge, MA.

Worked on design and implementation of a Lisp-to-C translator in support of multi-platform deployment of Genysm's G2 real-time intelligent system product. Additional work on bug fixing and feature implementation for the G2 product itself.

1985-1996 Senior Member of Technical Staff at GTE Laboratories, Waltham, MA.

Theoretical and applied research and development in the areas of machine learning, artificial intelligence, adaptive control, constraint satisfaction, and intelligent agents. Applications to network traffic control, wireless channel assignment, personalized information services, among many others. (Detailed descriptions of projects available upon request)

1981-1985 Assistant Professor of Computer Science at Hampshire College, in Amherst, MA.

Hampshire College is an experimental liberal arts college with an emphasis on interdisciplinary studies. Teaching and involvement in areas such as artificial intelligence, cognitive science, computers in education, computer literacy, and computer science. Extensive supervision of individual student projects. Initiated innovative educational experiment called "Computer Studies Learning Community" based on my experiences as an undergrad in MIT's Experimental Study Group (ESG).

1979-1980 Research Assistant / computer programmer in the Psychology Department, Carnegie-Mellon University, Pittsburgh, PA.

Work included teaching an undergraduate the programming language LISP, and collecting detailed protocols of her learning behavior. Other work on constructing computer models of cognitive processes, including learning and perceptual abilities.

Skill Sets

Artificial Intelligence/Machine Learning

Broad background in AI/ML with particular strengths in heuristic search, constraint satisfaction, concept learning, discovery of macro-operators, planning, and adaptive autonomous agents.

Mathematics and Computer Science

Broad background in mathematics and computer science with strengths in combinatorics, graph theory, number theory, abstract algebra, formal languages and automata theory, and computational complexity.

Programming/Development

Excellent programming/debugging skills.
Excellent understanding of algorithms, algorithmic complexity, and data structures.
Languages: CommonLISP, Java, Javascript, LOGO, Applescript, C, Objective C, some Python, C++, Postscript, and TCL.
Systems: MacOSX, Windows and NT, UNIX, Symbolics Lisp Machine.

Puzzles and Games

Highly developed skills in analyzing and solving puzzles, playing games, and creating and implementing original designs for both puzzles and games. Long-standing interest in collecting, solving, and designing both puzzles and games. Extensive experience in applying computer techniques to the design and analysis of puzzles.

Teaching

Outstanding communication skills.
Tremendous patience in providing explanations, encouragement.
Strong enthusiasm and love for knowledge and learning.
Unique ability to simplify concepts, ideas, techniques, and methods.
Deep understanding of problem-solving processes.
Extraordinary empathy and awareness for how others think and approach problems.

Awards and Honors

Gensym Corporation Software Development Award of Excellence, February, 1998, for contributions to the Lisp-to-C translator project.

GTE Performance Recognition Award, June 1995, for work on Adaptive Sampling project.

GTE's Leslie H. Warner Technical Achievement Award, May, 1992, for work on the Integrated Learning System. The Warner Award is GTE's highest technical achievement award.

Phi Beta Kappa honorary fraternity, MIT, 1974.

Honorable Mention in the 33rd William Lowell Putnam Mathematics Competition, 1972.

National Merit Scholarship Finalist, 1970. Recipient of Thomas J. Watson Scholarship sponsored by IBM Corporation.

Class valedictorian and National Honor Society, Hershey Senior High School, Hershey, PA, May, 1970.

Background and Interests

My interests include collecting, solving, and designing puzzles and games; playing chess, backgammon, go, and video games; swimming, tennis, sailing, bicycling; listening to and creating music; recreational mathematics; and trying to understand how people think and learn.

Publications

Greene,C., and Iba,G., "Cayley's Formula for Multidimensional Trees,"
Discrete Mathematics, vol. 13, no. 1 (1975), pp. 1-11.

Iba,G., "Learning Disjunctive Concepts from Examples,"
MIT AI Memo 548, MIT Artificial Intelligence Laboratory, Cambridge, Mass., September, 1979.

Iba,G., "The Application of Heuristic Search and the Discovery of Macro-operators to Network Traffic Control", GTE Laboratories Technical Memorandum number TM-0062-10-88-506, GTE Laboratories, Waltham, MA., September, 1988.

Iba,G., "A heuristic approach to the discovery of macro-operators",
in Machine Learning, vol. 3, no. 4, March, 1989, pp. 285-317.

Silver,B., Frawley,W., Iba,G., Vittal,J., and Bradford,K.,
"ILS: A framework for multi-paradigmatic learning", in Porter,B., and Mooney,R., (eds.) Machine Learning: Proceedings of the seventh international conference, June, 1990, pp. 348-356.

Silver,B., Vittal,J., Frawley,W., Iba,G., and Bradford,K., "ILS: A Framework for Integrating Multiple Heterogeneous Learning Agents", in David,J-M., (editor) Proceedings of Avignon-90, Second Generation Systems, 1990, pp. 301-313.

Silver,B., Frawley,W., Iba,G., and Vittal,J., "An Architecture for Self-Improving Distributed Heterogeneous Agents", Proceedings of the Fourth International Conference on Industrial & Engineering Applications of Artificial Intelligence and Expert Systems", 1991.

Vittal,J., Silver,B., Frawley,W., Iba,G., Fawcett,T., Dusseault,S., and Doleac,J.,
"A Framework for Cooperative Adaptable Information Systems", in Next Generation of Information Systems - From Data To Knowledge, M.P. Papazoglou and J. Zeleznikow (eds.), 1992.

Iba,G., "On the Usefulness of Impasses for Limiting the Application of Learned Macro Operators in Order to Speed Up Problem Solving" in Proceedings of the ML92 Workshop on Knowledge Compilation and Speedup Learning, University of Aberdeen, Scotland, July 4, 1992.

Silver,B., Frawley,W., Iba,G., and Vittal,J., "ILS: A System of Learning Distributed Heterogeneous Agents for Network Traffic Management", in Proceedings IEEE International Conference on Communications, Geneva, Switzerland, May 23-26, 1993.

Iba,G., "Speedup and Scale-up in Experiential Learning" in Proceedings of the Third International Workshop on Knowledge Compilation and Speedup Learning, University of Massachusetts, Amherst, MA, June 30, 1993, pp. 90-95.

Iba,G., and Tanton, J., "Candy Sharing" in American Mathematical Monthly, January, 2003, pp. 25-35.

Iba,G., Round Trip Puzzles, New York: Sterling Publishing, 2011.