Exh. A

Declaration of Dr. Shiva Ayyadurai

DECLARATON OF SHIVA AYYADURAI, PHD

I, Dr. Shiva Ayyadurai, hereby submit this Declaration, under the penalty and pains of perjury that the following is true and correct:

1. I am over the age of 18 years and competent to testify herein.

2. I am an engineer with vast experience in engineering systems, pattern recognition, mathematical and computational modeling and analysis. My Curriculum Vitae (CV) is attached to this Declaration.

3. Recently I had cause to analyze the flow of electronic votes between the candidates in the 2020 Presidential election held in the States of Arizona, Michigan, and Georgia.

4. Paper ballots are marked by voters to document selection. Voters, based on a precinct, may use touch-screen equipment, which records their vote digitally without any paper involved.

5. Digital scanners scan paper ballots and create an electronic image of the paper ballot. This raw image file is called *the ballot image* and is an electronic file with an assigned file name. This raw file is held within the scanning machine and is used to tabulate the vote count.

6. During tabulation, ballot images are analyzed to generate the Cast Vote Record (CVR) that contains the counts of the ballots cast.

7. When the machine exports the ballot images, it may be exported as raw files or converted into a different file format as determined by the Election Management System used. Formats such as PDF, TIF, PNG, and PBM are examples of popular image formats.

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8.   Crucially, the file names could be changed making it difficult to ascertain the link between and the CVR. This makes examination of the original file names mandatory to confirm the link with the actual voters.

9.   These ballot image files are imported into the higher jurisdiction's Election Management System from any and all voting system scanners or imaging components (for example: poll-site based, absentee count board-based, central-based) used at the local precinct level, including polling place scanners, and high-speed or other centrally-based scanners used for absentee vote counting.

10. The Cast Vote Record is usually maintained in XLSX, CSV, XML, or JSON formats. This makes it easy to import them into spreadsheets.

11. The List of Vote Records (LVR), also called the Vote Cast Log, Cast Ballot Log, or other designation, is a record or set of records that consists of a spreadsheet, with each row displaying contents of one ballot, or contents of one Cast Vote Record (CVR). This record may consist of more than one file. (For clarity, here is a sample page of this record obtained from Hillsborough County, Florida, which may be viewed at this link: https://tinyurl.com/y2yl3hbp).

12. When votes are tabulated, it is the electronic ballot image that is evaluated by the tabulation software. This makes the electronic ballot image *the actual ballot used* to count the vote. The paper ballot is merely stored physically by elections officials to serve as the audit trail backup record. Thus, no conclusions about the accuracy of the electronic vote count may be made without access to the actual raw ballot images used to tabulate the vote. Naturally, the electronically tabulated vote count must be identical to the paper ballot hand count in order for election integrity to be established. It is thus mandatory to

gain access to the raw ballot images and tabulate a vote count using those very images when the final tally is in dispute.

13. When votes are tabulated, it is the electronic ballot image that is evaluated by the tabulation software. This makes the electronic ballot image *the actual ballot used* to count the vote. The paper ballot is merely stored physically by elections officials to serve as the audit trail backup record. Thus, no conclusions about the accuracy of the electronic vote count may be made without access to the actual raw ballot images used to tabulate the vote. Naturally, the electronically tabulated vote count must be identical to the paper ballot hand count in order for election integrity to be established. It is thus mandatory to gain access to the raw ballot images and tabulate a vote count using those very images when the final tally is in dispute.

MATHEMATICAL ANALYSES OF ELECTRONIC DATA
FROM GEORGIA REVEALS MASSIVE ANOMALIES IN REPUBLICAN VOTING
PATTERNS AND ETHNIC DISTRIBUTION OF VOTES

14. I had cause to perform mathematical analyses of actual voting data from six counties in the State of Georgia. Screenshots follow documenting the results. I shall explain each graph as we proceed.

15. Analysis of Chatham County – Republican Voting Pattern and Ethnic Demographics

   a. The Party Demographics of the County is as follows:

   - Republican: 39.9%
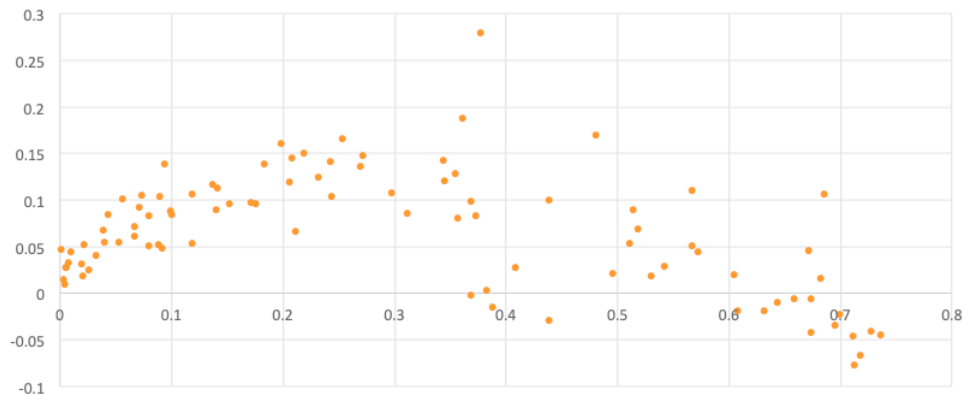   - Democrat: 58.7%

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- Independent: 1.4%

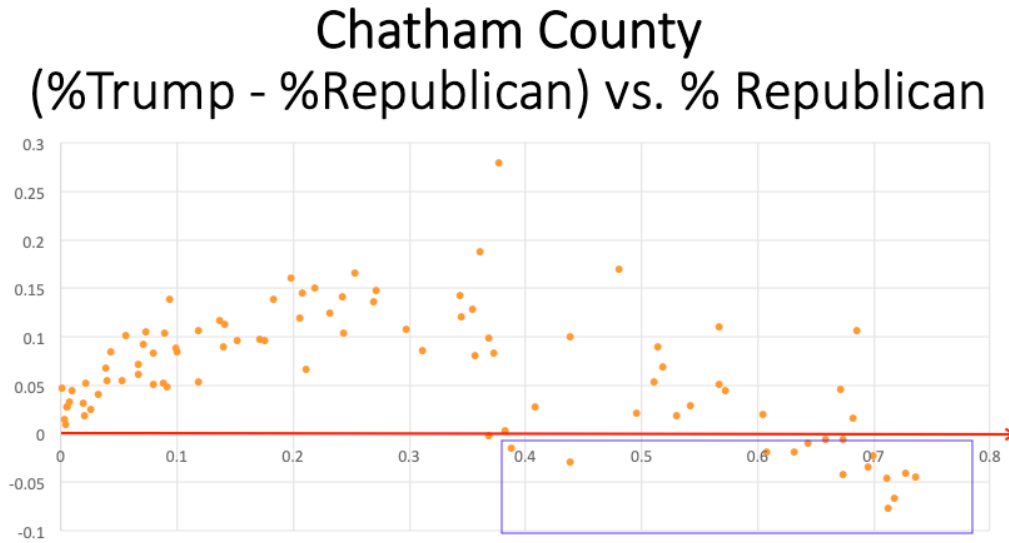b. The Ethnic Demographics of the County is as follows:

- 49% White
- 37% Black
- 2.5 % Hispanic
- 1.5% Asian
- 8% Unspecified
- 2% Other

c. Now follows a graph that shows that as the percentage of Republicans in precincts increases, President Trump gets fewer votes. Each dot on the graph represents a single precinct with the County. The x-axis is the percentage of Republicans in a precinct represented in decimal numbers. The y-axis is a measure of the difference in the percentage of voters who voted for President Trump in that precinct and the percentage of Republicans in that precinct.

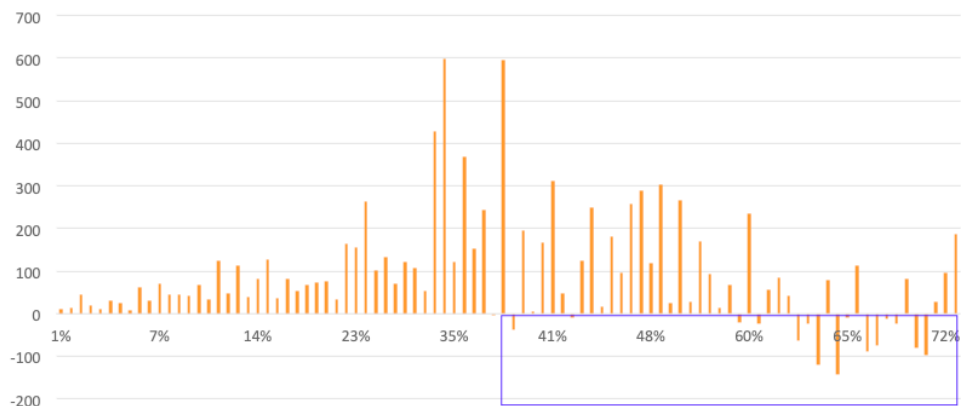## Chatham County
(%Trump - %Republican) vs. % Republican

d. The graph below with the red arrow at the zero line serves to highlight the precincts, indicated within the blue box that apparently is "High Republican, But Low Trump."

## Chatham County
(%Trump - %Republican) vs. % Republican

e. The graph below plots on the x-axis the percentage of Republicans in a precinct, and on the y-axis the difference in the actual number of votes between what President Trump received and the number of votes he would have received had Republicans in that precinct voted for him. This graph again shows that President Trump apparently lost votes in the same pattern as above - "High Republican, But Low Trump."

Chatham County
(Trump Actual Votes − Projected Republican Votes)
## vs. Republican Precincts

f.   The graph below plots the actual number of votes, reported by the Secretary of
     State of Georgia for the County, as received by Mr. Biden (in blue) and President
     Trump (in red) as the number of votes accumulates from small to large on the x-
     axis. The end points on the right are the final number of votes received by Mr.
     Biden and President Trump as reported by the Secretary of State.

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Chatham County
Actual Votes – Biden and Trump
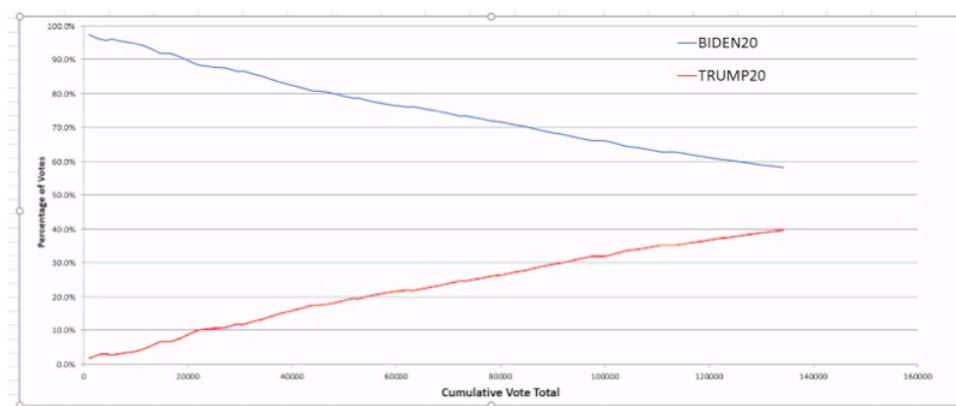
g. The graph below contains two new lines: one in purple, and one in yellow. The

line in purple plots the number of votes for Mr. Biden based on the ethnic

demographic distribution that matches the pattern of actual votes reported by the

Secretary of State reported for Mr. Biden (in blue). The line in yellow plots the

number of votes for President Trump based on the same ethnic demographic

distribution to match the pattern of actual votes reported by the Secretary of State

reported for President Trump (in red).

Chatham County
Analysis of Votes Based on Ethnic Distribution
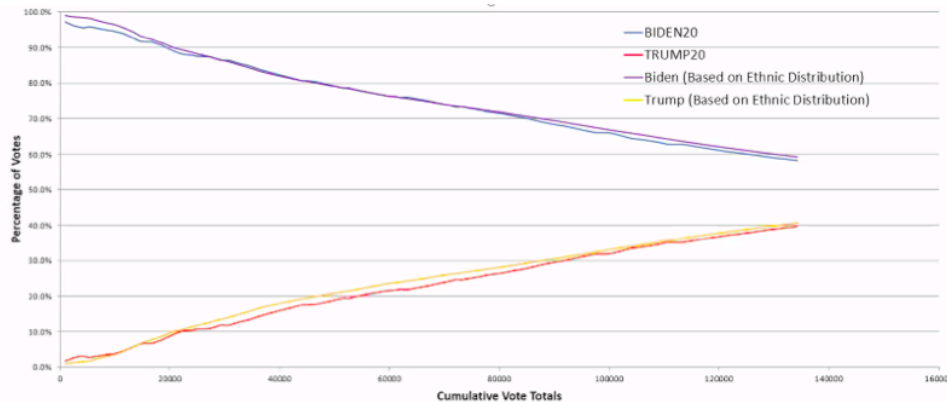
h. The above analysis reveals that although the percentage of Whites and Blacks in the County are 49% and 37%, respectively, the only plausible way to explain the results, reported by the Secretary of State, is if President Trump did not receive one single Black vote, and the demographic distribution of votes between Mr. Biden and President Trump was as follows:

• Demographic distribution analysis of Actual Vote Results

	White	Black
Biden	30%	100%
Trump	70%	0%

16. Analysis of Fulton County - Republican Voting Pattern and Ethnic Demographics

a. The Party Demographics of the County is as follows:
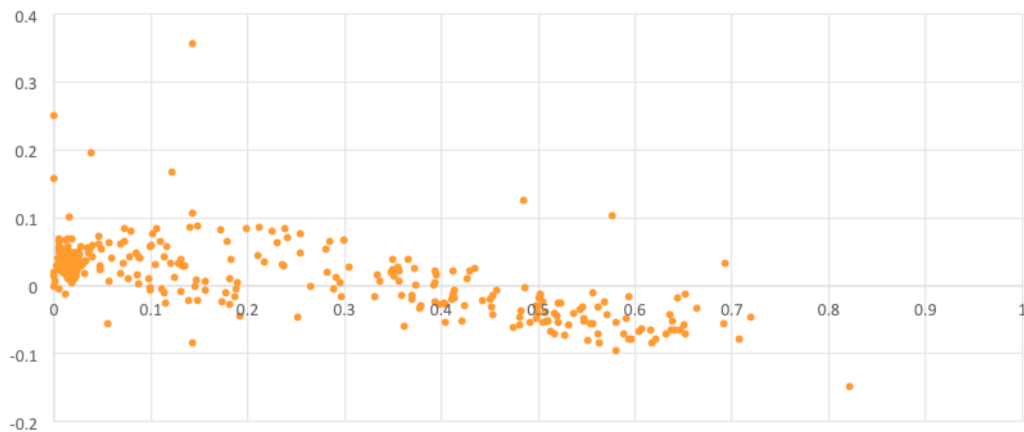
- Republican: 26.3%
- Democrat: 72.5%
- Independent: 1.2%

b. The Ethnic Demographics of the County is as follows:
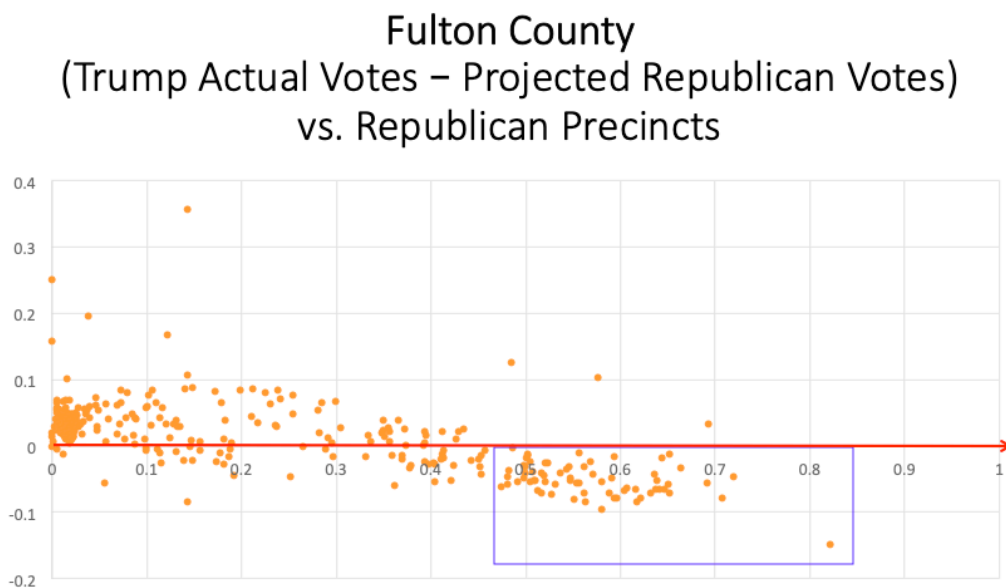
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- White: 38%

- Black: 42%

- Hispanic: 3%

- Asian: 3%

- Unspecified: 12%

- Other: 2%

c. Now follows a graph that shows that as the percentage of Republicans in precincts increases, President Trump gets fewer votes. Each dot on the graph represents a single precinct with the County. The x-axis is the percentage of Republicans in a precinct represented in decimal numbers. The y-axis is a measure of the difference in the percentage of voters who voted for President Trump in that precinct and the percentage of Republicans in that precinct.
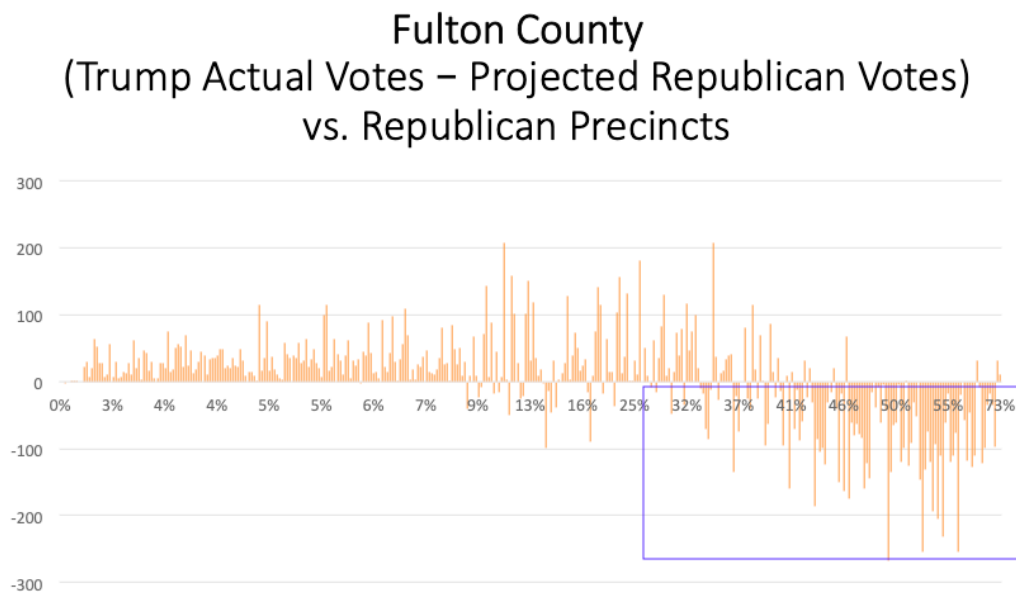
Fulton County
(Trump Actual Votes – Projected Republican Votes)
vs. Republican Precincts

d. The graph below with the red arrow at the zero line serves to highlight the

precincts, indicated within the blue box that apparently is "High Republican, But

Low Trump."

Fulton County
(Trump Actual Votes – Projected Republican Votes)
vs. Republican Precincts

e. The graph below plots on the x-axis the percentage of Republicans in a precinct,

and on the y-axis the difference in the actual number of votes between what

President Trump received and the number of votes he would have received had

Republicans in that precinct voted for him. This graph again shows that President

Trump apparently lost votes in the same pattern as above - "High Republican, But

Low Trump."

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Fulton County
(Trump Actual Votes – Projected Republican Votes)
vs. Republican Precincts

f. The graph below plots the actual number of votes, reported by the Secretary of

State of Georgia for the County, as received by Mr. Biden (in blue) and President

Trump (in red) as the number of votes accumulates from small to large on the x-

axis. The end points on the right are the final number of votes received by Mr.

Biden and President Trump as reported by the Secretary of State.

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Fulton County
Actual Votes – Biden and Trump
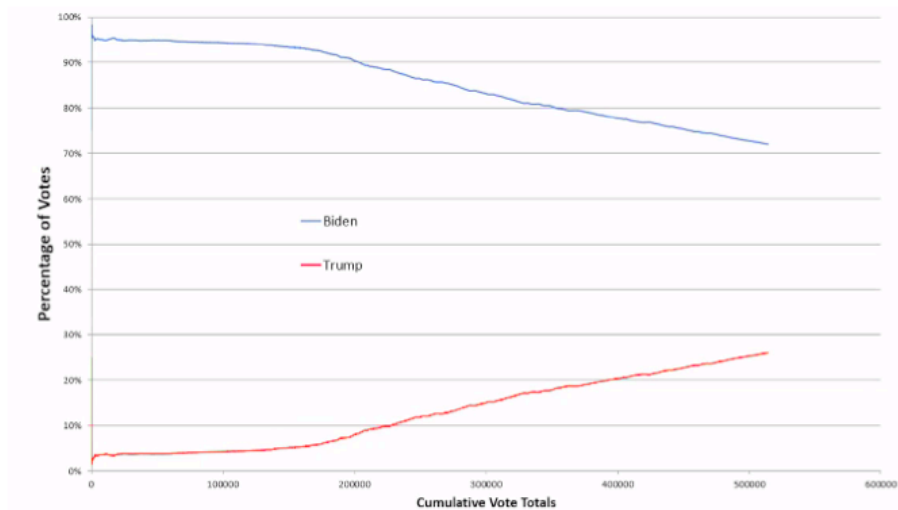
g. The graph below contains two new lines: one in purple, and one in yellow. The

line in purple plots the number of votes for Mr. Biden based on the ethnic

demographic distribution that matches the pattern of actual votes reported by the

Secretary of State reported for Mr. Biden (in blue). The line in yellow plots the

number of votes for President Trump based on the same ethnic demographic

distribution to match the pattern of actual votes reported by the Secretary of State

reported for President Trump (in red).

Fulton County
Analysis of Votes Based on Ethnic Distribution
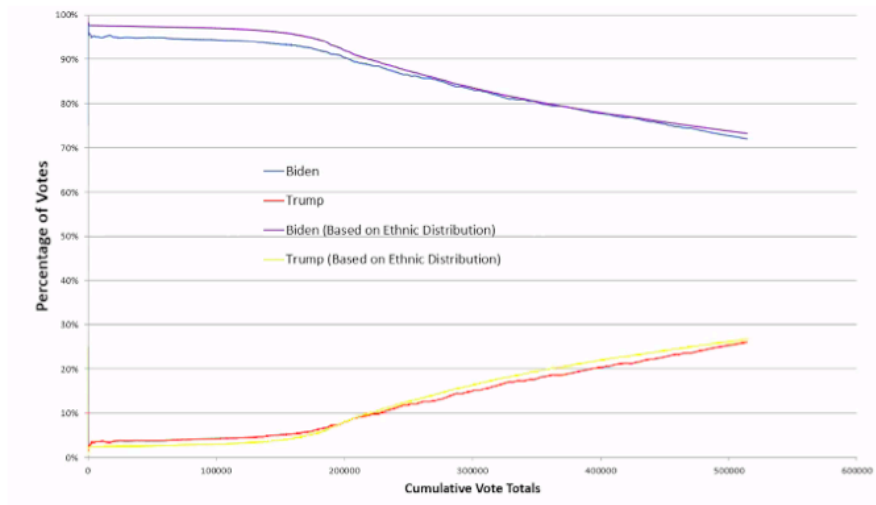
h. The above analysis reveals that although the percentage of Whites and Blacks in the County are 38% and 42%, respectively, the only plausible way to explain the results, reported by the Secretary of State, is if President Trump received only 2% of the Black vote, and the demographic distribution of votes between Mr. Biden and President Trump was as follows:

• Demographic distribution analysis of Actual Vote Results

	White	Black
Biden	46%	98%
Trump	54%	2%

17. Analysis of Cobb County - Republican Voting Pattern and Ethnic Demographics

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a. The Party Demographics of the County is as follows:
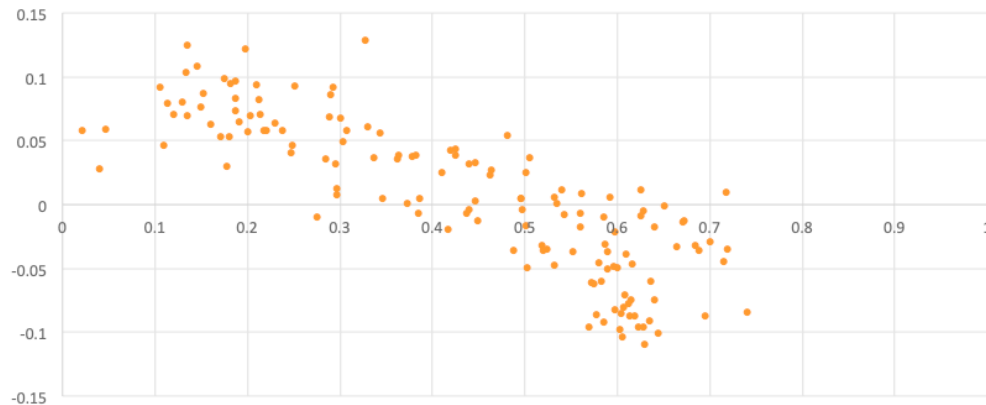
- Republican: 56.3%

- Democrat: 42.1%

- Independent: 1.6%

b. The Ethnic Demographics of the County is as follows:

- White: 54%

- Black: 26%

- Hispanic: 6%

- Asian: 3%

- Unspecified: 7%

- Other: 3%

c. Now follows a graph that shows that as the percentage of Republicans in precincts

increases, President Trump gets fewer votes. Each dot on the graph represents a

single precinct with the County. The x-axis is the percentage of Republicans in a

precinct represented in decimal numbers. The y-axis is a measure of the

difference in the percentage of voters who voted for President Trump in that

precinct and the percentage of Republicans in that precinct.

Cobb County
(%Trump - %Republican) vs. % Republican

d. The graph below with the red arrow at the zero line serves to highlight the

    precincts, indicated within the blue box that apparently is "High Republican, But

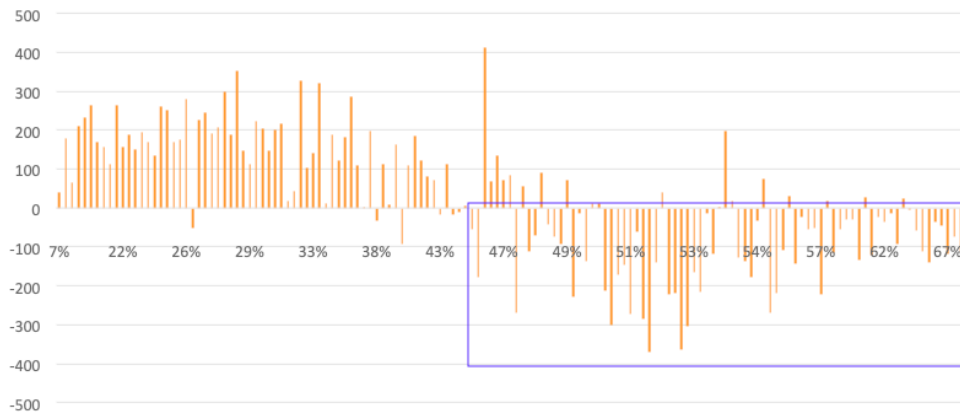   Low Trump."

Cobb County
(%Trump - %Republican) vs. % Republican

e. The graph below plots on the x-axis the percentage of Republicans in a precinct,

    and on the y-axis the difference in the actual number of votes between what

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President Trump received and the number of votes he would have received had Republicans in that precinct voted for him. This graph again shows that President Trump apparently lost votes in the same pattern as above - "High Republican, But Low Trump."

Cobb County
(Trump Actual Votes – Projected Republican Votes) vs. Republican Precincts

f. The graph below plots the actual number of votes, reported by the Secretary of State of Georgia for the County, as received by Mr. Biden (in blue) and President Trump (in red) as the number of votes accumulates from small to large on the x-axis. The end points on the right are the final number of votes received by Mr. Biden and President Trump as reported by the Secretary of State.

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Cobb County
Actual Votes – Biden and Trump
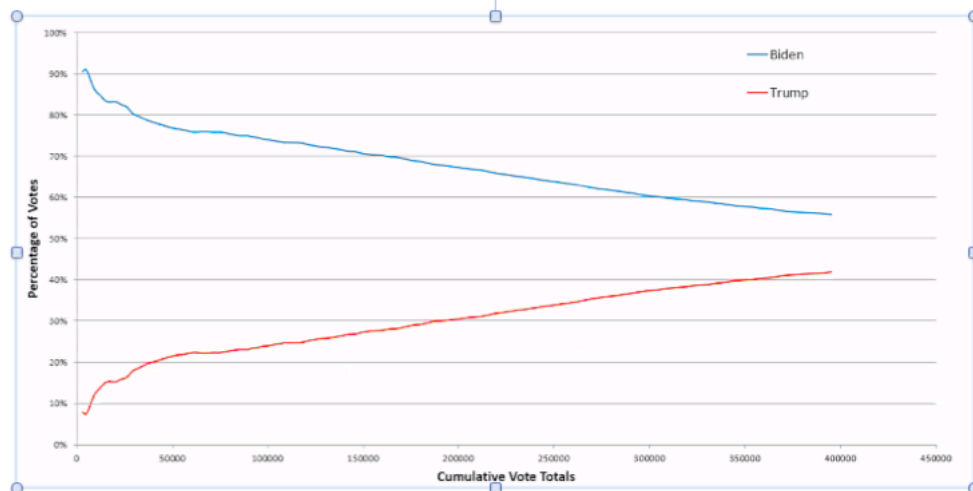
g. The graph below contains two new lines: one in purple, and one in yellow. The line in purple plots the number of votes for Mr. Biden based on the ethnic demographic distribution that matches the pattern of actual votes reported by the Secretary of State reported for Mr. Biden (in blue). The line in yellow plots the number of votes for President Trump based on the same ethnic demographic distribution to match the pattern of actual votes reported by the Secretary of State reported for President Trump (in red).

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Cobb County
Analysis of Votes Based on Ethnic Distribution
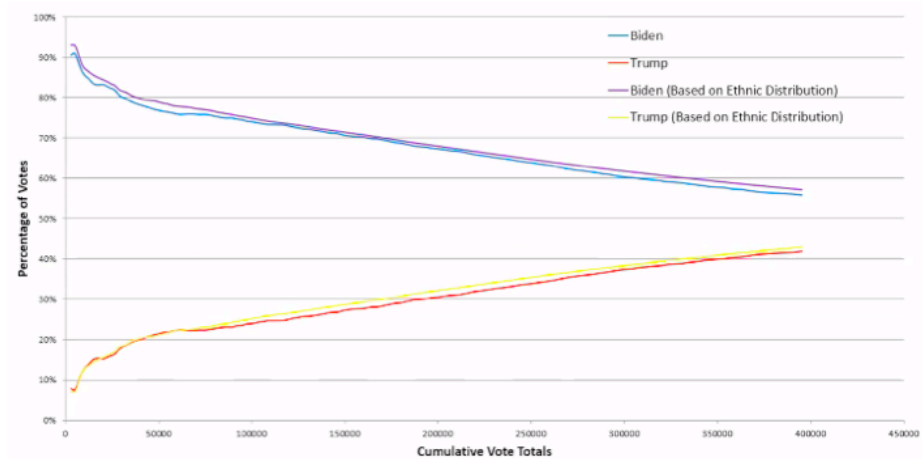
h. The above analysis reveals that although the percentage of Whites and Blacks in the County are 54% and 26%, respectively, the only plausible way to explain the results, reported by the Secretary of State, is if President Trump received not one single Black vote, and the demographic distribution of votes between Mr. Biden and President Trump was as follows:

• Demographic distribution analysis of Actual Vote Results

	White	Black
Biden	29%	100%
Trump	71%	0%

18. Analysis of Forsyth County - Republican Voting Pattern

    a. The Party Demographics of the County is as follows:

        • Republican: 65.8%

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- Democrat: 32.6%

- Independent: 1.6%

b. Now follows a graph that shows that as the percentage of Republicans in precincts

   increases, President Trump gets fewer votes. Each dot on the graph represents a

   single precinct with the County. The x-axis is the percentage of Republicans in a

   precinct represented in decimal numbers. The y-axis is a measure of the

   difference in the percentage of voters who voted for President Trump in that

   precinct and the percentage of Republicans in that precinct.

Forsyth County
(%Trump - %Republican) vs. % Republican
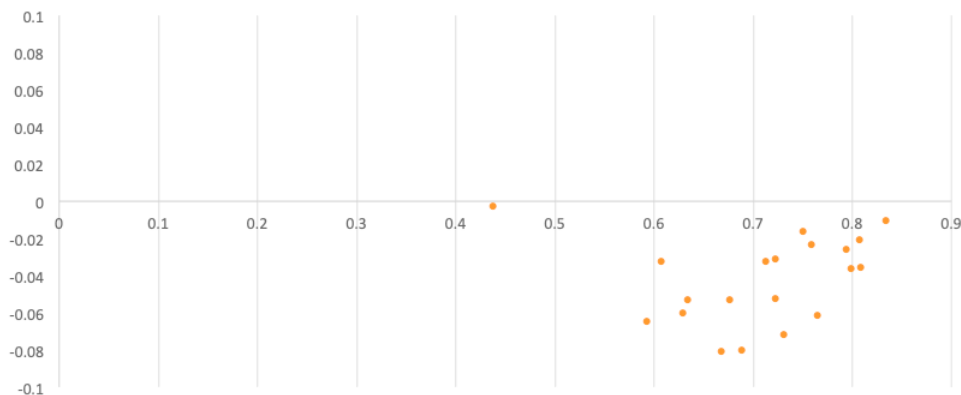
c. The graph below with the red arrow at the zero line serves to highlight the

   precincts, indicated within the blue box that apparently is "High Republican, But

   Low Trump."

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Forsyth County
(%Trump - %Republican) vs. % Republican

d. The graph below plots on the x-axis the percentage of Republicans in a precinct,

and on the y-axis the difference in the actual number of votes between what

President Trump received and the number of votes he would have received had

Republicans in that precinct voted for him. This graph again shows that President

Trump apparently lost votes in the same pattern as above - "High Republican, But

Low Trump."

Forsyth County
(Trump Actual Votes – Projected Republican Votes)
vs. Republican Precincts
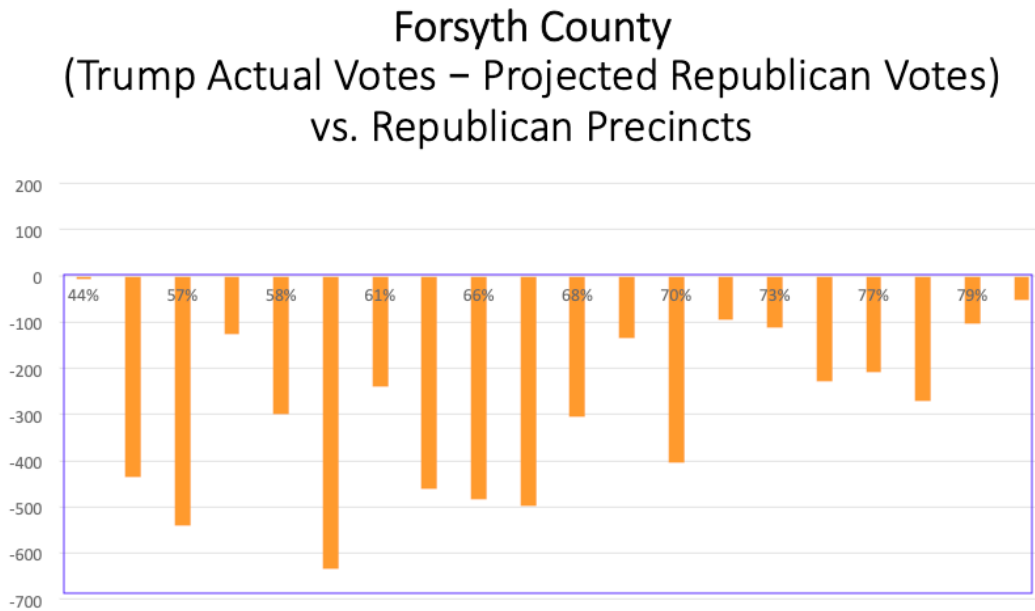
19. Analysis of Cherokee County - Republican Voting Pattern

    a. The Party Demographics of the County is as follows:

        • Republican: 68.8%

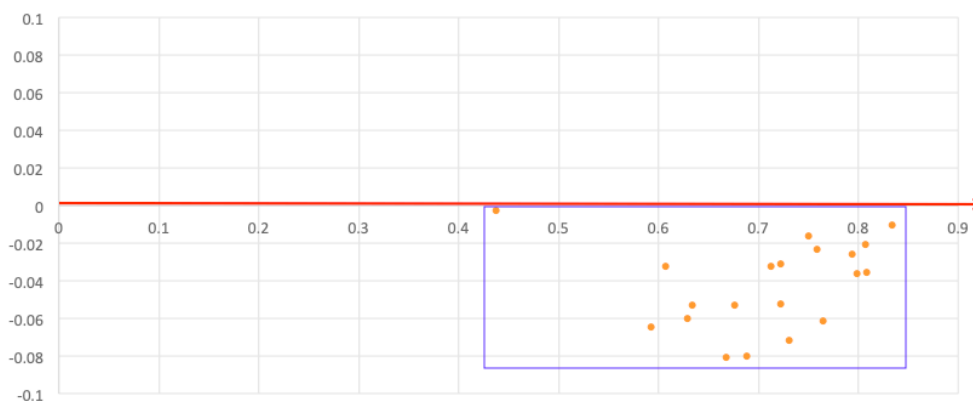   • Democrat: 29.5%

        • Independent: 1.7%

    b. Now follows a graph that shows that as the percentage of Republicans in precincts increases, President Trump gets fewer votes. Each dot on the graph represents a single precinct with the County. The x-axis is the percentage of Republicans in a precinct represented in decimal numbers. The y-axis is a measure of the

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difference in the percentage of voters who voted for President Trump in that

precinct and the percentage of Republicans in that precinct.


c. The graph below with the red arrow at the zero line serves to highlight the

precincts, indicated within the blue box that apparently is "High Republican, But

Low Trump."

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d. The graph below plots on the x-axis the percentage of Republicans in a precinct, and on the y-axis the difference in the actual number of votes between what President Trump received and the number of votes he would have received had Republicans in that precinct voted for him. This graph again shows that President Trump apparently lost votes in the same pattern as above - "High Republican, But Low Trump."

Cherokee County
(%Trump - %Republican) vs. % Republican

20. Compound Analysis of Six Counties - Republican Voting Pattern

a. **"High Republican, But Low Trump"** - The graph below is compound analysis of the Republican voting pattern in six counties: Fulton, Cobb, DeKalb, Cherokee, Chatham, Forsyth. The graph plots on the x-axis the percentage of Republicans in a precinct, and on the y-axis the difference in the actual number of votes between what President Trump received and the number of votes he would have received had Republicans in that precinct voted for him. This graph again

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shows that President Trump apparently lost votes in the same pattern as above -

"High Republican, But Low Trump."

Compound Analysis of Six Counties: Fulton, Cobb, DeKalb, Chatham, Cherokee, Forsyth
(Trump Actual Votes – Projected Republican Votes) vs. Republican Precincts

21. Compound Analysis of Six Counties - Republican Voting Pattern

a. **"High Republican, But Low Trump"** - The graph below is compound analysis

of the Republican voting pattern in six counties: Fulton, Cobb, DeKalb,

Cherokee, Chatham, Forsyth. The graph plots on the x-axis the percentage of

Republicans in a precinct, and on the y-axis the difference in the actual number of

votes between what President Trump received and the number of votes he would

have received had Republicans in that precinct voted for him. This graph again

shows that President Trump apparently lost votes in the same pattern as above -

"High Republican, But Low Trump."

Compound Analysis of Six Counties: Fulton, Cobb, DeKalb, Chatham, Cherokee, Forsyth (Trump Actual Votes − Projected Republican Votes) vs. Republican Precincts

DISCOVERY OF ALGORITHM USED TO ALLOCATE VOTES FROM PRESIDENT
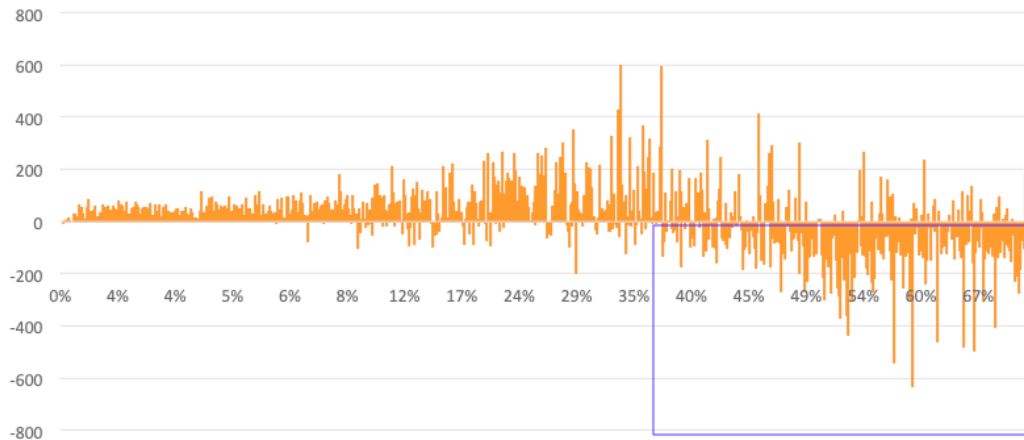
TRUMP TO MR. BIDEN – I.E. ELECTION FRAUD

22. It is assumed in the United States of America, we have "One Person, One Vote."

However, with the use of electronic voting systems, this is not guaranteed.

23. Consider the diagram below, if P number of voters, vote, we expect V number of votes.
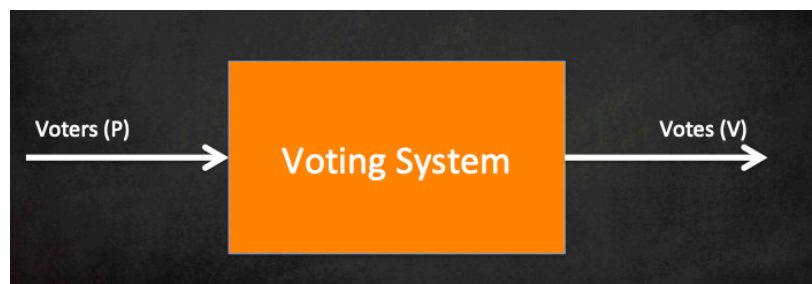
24. In the above diagram, P is equal to the number of registered Republicans PLUS the

number registered Democrats PLUS the number of those unregistered in either party –

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"Independents" – PLUS the number of those in other parties (i.e. Libertarian, Green, etc.).

25. In the above diagram, V is equal to the number of votes cast for the Republican candidate i.e. President Trump PLUS the number of votes cast for the Democrat candidate i.e. Mr. Biden PLUS the number of votes cast for the other party candidates i.e. Jo Jorgensen PLUS the number of write-in votes PLUS the number of undervotes (blank votes) PLUS the number of overvotes (voting for both candidates).

26. Most of us believe that P will equal V assuming that what goes into the Voting System, as illustrated in the above diagram, will not be manipulated in any manner; however, it is documented in the technical manuals of electronic voting machine software that a "weighted race" feature exists to multiply a voter's vote by a "weight" – a decimal value - that can be less than 1 or greater than 1. Moreover, documentation exists to show that the vote counts are stored as decimal values, not as integers.

27. The existence of the "weighted race" feature provides a mechanism to employ an algorithm so, "One Person, DOES NOT Equal One Vote." This means P will equal V if and only if the weights equal 1 ("one"); otherwise, the assumption P equals V is false.

28. In the analysis of DeKalb County, using data provided by the Secretary of State of Georgia, there is unequivocal evidence of an algorithm that has been put in place such that when a precinct nears approximately ten-percent ("10%") in White voters, a linearly increasing percentage of total votes is transferred from President Trump to Mr. Biden.

29. DeKalb County has approximately 31% White voters, and 52% Black voters.

30. The graph below plots on the x-axis the number of cumulative votes as reported by the

Secretary of State of Georgia. As we move from left to right on the x-axis, the percentage

of white voters in each precinct increases. The y-axis plots the difference between Mr.

Biden's votes as reported by the Secretary of State of Georgia and what he should have

received based on the ethnic distribution of DeKalb County.

Total Number of Cumulative Votes in Dekalb County
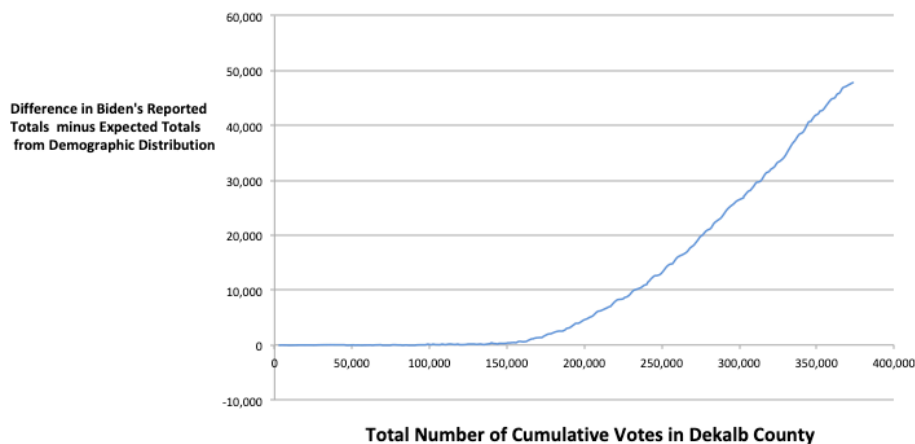
31. The above graph indicates as the percentage of white voters increases beyond

approximately ten-percent (10%), at a total vote count of approximately 150,000 votes, a

mathematical algorithm comes into play, to transfer a weighted factor of total votes from

President Trump to Mr. Biden in a very specific – un-natural, machine-like manner.

Based on the current data, that weight factor appears to be approximately 1.22.

32. Using the weight factor of 1.22, approximately 48,000 votes were transferred to Mr.

Biden to DeKalb County alone.

CONCLUSION

This Declaration has presented, in multiple counties in Georgia, a consistent pattern of

"High Republican, Low Trump" vote pattern anomalies that are improbable. In addition, it was

discovered that when ethnic distributions were applied to three (3) counties, the only plausible

explanation for the vote distribution was that President Trump received near zero Black votes,

which is also highly improbable.

Analysis of DeKalb County enabled the discovery of a "weighted race" algorithm that

transferred, using a "weight" of 1.22, approximately 48,000 votes from President Trump to Mr.

Biden. In DeKalb County, 373,000 votes were cast.   The approximate 48,000 votes transferred

to Mr. Biden represents approximately 13% of the total votes cast in DeKalb County.

When one considers the entire State of Georgia, the number of votes cast in DeKalb

county represents a mere 7.5% of the total number of votes cast in the entire State of Georgia,

which was reported by the Secretary of State of Georgia to be 4,998,482 votes.

The analysis herein reveals the number of voters may likely not equal of the number of

votes given algorithms were in place to manipulate the tabulation of votes. This result demands

that ballot images, log files, CVR, and electronic data files from each precinct be reviewed to

validate the integrity of the election in Georgia. Until that time, the election results are

unverifiable.

Respectfully submitted under the pains and penalties of perjury,

November 25, 2020   _____

                                           Dr. Shiva Ayyadurai
                                           701 Concord Ave,
                                           Cambridge, MA 02138
                                           Phone: 617-631-6874
                                           Email: vashiva@vashiva.com

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CURRICULUM VITAE
Shiva Ayyadurai, Ph.D.

Education
INSTITUTION AND LOCATION DEGREE YEAR FIELD OF STUDY
MIT, Department of Biological Engineering Ph.D. 2007 Systems Biology
MIT, Department of Mechanical Engineering S.M.M.E. 1990 Applied Mechanics
MIT Media Laboratory, Department of Architecture S.M.V.S. 1989 Scientific Visualization
MIT, Department of Electrical Engineering and Computer Science S.B.E.E. 1986 Operating Systems

Industry & Entrepreneurial Experience
2010-Present Founder, Chairman & CEO, Chief Scientist, CytoSolve, Inc.
2009 Additional-Secretary, Indian Government & CEO, CSIR-Tech, India
2004-Present Board Member, EchoMail, Inc., Enterprise Email Management
2004-Present Founder and Managing Director, General Interactive, LLC, Venture Incubator
1998-2004 Founder, President & CEO, EchoMail, Inc., Enterprise Email Management
1994-1998 Founder, President & CEO, Millennium Productions, Inc., Software & Media Production
1990-1994 Director of Advanced Products, Dataware Technologies, Inc., CD-ROM Search Software,
1986-1990 Senior Engineer, Graphics Software, IBM/Lotus Development Corporation
1984-1986 Senior Engineer, Information Resources, Inc., Marketing Analytics
1983-1984 Consulting Software Engineer, Chase, Inc., Hydrodynamics Software,
1982-1984 Research Engineer, HP Medical Systems, Operating System for Cardiologist Workstation,
1982-1983 Consulting Software Engineer, MIT Civil Engineering, Intelligent Signal Processing,
1981-1982 Consulting Software Engineer, Number Nine, Inc., Advanced Graphics Hardware,

Academic Teaching Experience
2010–Present Lecturer, Systems Thinking Workshops, Systems Health, LLC
2010-2013 Lecturer, Systems Visualization, MIT Comparative Media Studies
2007-2012 Lecturer, MIT Biological Engineering Department
2007 Lecturer, Biological Pathway Design and Implementation, SMA 2007 Boot Camp
2006 Lecturer, Biological Pathway Design and Implementation, SMA 2006 Boot Camp
2006 Teaching Assistant, Control Systems and Dynamics, 2.14, MIT Mechanical Engineering
1994-2004 Industry Expert, "Dr. E-Mail", Lectures Worldwide, Global 2000 Companies
1992-1994 Lecturer, Information Technology I, MIT Sloan School of Management
1990 Teaching Assistant, Dynamics, 2.03, MIT Department of Mechanical Engineering.
1988 Lecturer, Physics, MITES Program,
1987 Teaching Assistant, Computer Graphics, 4.971, MIT Media Laboratory
1986 Teaching Assistant, Measurements Laboratory, 2.671, MIT Mechanical Engineering
1985 Teaching Assistant, Being There, MIT Humanities Department
1984 Tutor, Circuits and Electronics, 6.002, MIT Electrical Engineering and Computer Science
1983 Tutor, Structures & Programming, 6.001, MIT Electrical Engineering & Computer Science
1982 Lecturer, IAP Course on Indian Art History, MIT Humanities Department

Academic Research Experience

2009-Present Director, International Center for Integrative Systems, Educational & Research Foundation

2013-2014 Visiting Scientist, Sociotechnical Systems Rsrch Ctr., Engineering Systems Division, MIT

2010-2011 Director, MIT Media & Organizational Biomimetics, Comparative Media Studies, MIT

2009 Scientist Level H, Council of Scientific and Industrial Research, New Delhi, India

2007-2009 Fulbright Scholar, Systems Biology-Traditional Medicines, US-India Fulbright Program

2004-2007 Research Associate, MIT Biological Engineering, Computational Systems Biology

1996-2004 Chief Scientist, EchoMail, Inc., Large Scale Architectures for Message Analysis

1992-1996 Chief Technology Officer, Information Cybernetics, Inc., Document Analysis & Modeling

1990-1992 Research Team Leader, Sloan School of Mgmt, Offline Handwriting Recognition, MIT

1988-1990 Graduate Research Assistant, MIT NDE Lab, Wave Propagation Analysis and Modeling

1986-1988 Graduate Research Fellow, MIT Media Laboratory, Automated Graphic Design System

1984-1986 UROP Research, Particle Analysis in Fluidized Bed Reactors, Langer Laboratory, MIT

1983-1984 UROP Research, Cryogenic Embryo Preservation, Health Sciences and Tech., MIT

1982 UROP Research, History of India's Caste System, Prof. Noam Chomsky, MIT

1981-1983 UROP Research, Tadoma and Speech Recognition, Research Lab for Electronics, MIT

1978-1983 Research Associate, Sleep Pattern Analysis, Biomedical Engineering, UMDNJ

1978-1984 Research Fellow, Email System, Laboratory for Computer Science, UMDNJ

Political & Activism Experience

Republican Candidate for U.S. Senate 2020 from Massachusetts

Running for U.S. Senate to represent MA in 2020

Independent Candidate for U.S. Senate 2018 from Massachusetts

Garnered a historic ~100,000 votes running aggressive ground campaign in MA. Number of votes was

five times greater than any other Independent candidate in MA history.

Industry Publications

Dr. Shiva Ayyadurai is the author of over 200 hundred confidential industry publications, white papers

and studies performed in the fields of email technologies and systems biology for global 2000 companies.

The titles of those publications are available upon request. 1992 – Present.

Selected Academic Publications

S. Ayyadurai, P. Deonikar, Modulation of Neural Signaling by Tetrahydrocannabinol (THC), Food

Chemistry, Submitted for Publication, June 2019.

S. Ayyadurai, M. Hansen, J. Fagan, P. Deonikar, *In-Silico* Analysis & *In*-Vivo Results Concur on

Glutathione Depletion in Glyphosate Resistant GMO Soy: Advancing a Systems Biology Framework for

Safety Assessment of GMOs, American Journal of Plant Sciences, Vol. 7, No. 12, August 19, 2016.

M. Sweeney, S. Ayyadurai, B.V. Zlokovic, Pericytes of the neurovascular unit: key functions and

signaling pathways, Nature Neuroscience, Vol. 19, No. 6, 771-83, May, 2016.

S. Ayyadurai, P. Deonikar, Do GMOs Accumulate Formaldehyde and Disrupt Molecular Systems

Equilibria? Systems Biology May Provide Answers, Agricultural Sciences, Vol. 6, No. 7, July 10, 2015.

S. Kothandaram, P. Deonikar, M. Mohan, V. Venugopal, S. Ayyadurai, *In-Silico* Modeling of C1 Metabolism, American Journal of Plant Sciences, Vol. 6, No. 9, June 17, 2015.

S. Ayyadurai, The Control Systems Engineering Foundation of Traditional Indian Medicine: the Rosetta

Stone for Siddha and Ayurveda, Systems of Systems Engineering, Vol. 5, No. 2, 125-149, June, 2014.

A. Koo, S. Ayyadurai, D. Nordsletten, R. Umeton, B. Yankama, S. Ayyadurai, G. García-Cardeña, C.

Forbes Dewey Jr., *In Silico* Modeling of Shear-stress-induced Nitric Oxide Production in Endothelial Cells

through Systems Biology, Cell Biophysical Journal, Volume 104, Issue 10, 2295-2306, May 21, 2013.

S. Ayyadurai, S. Abraham, T. Zawacki, International Small Business Commerce (ISBC): Potential Source

of New Revenue for the United States Postal Service, U.S. Postal Service Office of Inspector General,

February 15, 2013.

S. Ayyadurai, D. Sparks, L.P. Michelson, S. Abraham, Email Management & Potential Opportunities for

United States Postal Service, U.S. Postal Service Office of Inspector General, August 24, 2012.

S. Ayyadurai, D. A. Nordsletten, B. Yankama, R. Umeton, C. F. Dewey Jr., Multi-scale Mathematical

Modeling to Support Drug Development, Proceedings of Biomedical Engineering Society (BMES),

Hartford, CT, October 12-15, 2011.

S. Ayyadurai, C.F. Dewey, Jr., CytoSolve: A Scalable Computational Method for Dynamic Integration of

Multiple Molecular Pathway Models, Biological Engineering Division, MIT, Cambridge, MA, June

28, 2011.

S. Ayyadurai, Biomimetics of Communication and Media, 12th International Research Symposium on

Service Excellence in Management, Ithaca, NY, June 2-5, 2011.

S. Ayyadurai, C.F. Dewey, Jr., A Distributed Computational Architecture for Integrating Multiple

31

Biomolecular Pathways, Biological Engineering Division, MIT, Cambridge, MA, March 9, 2011.

S. Ayyadurai, Services-Based Systems Architecture for Modeling the Whole Cell: A Distributed Collaborative Engineering Systems Approach, Communications in Medical and Care Compunetics,
Springer Publications, 16 November 2010.

S. Ayyadurai, B. Yankama, R. Umeton, C. F. Dewey Jr., Editing and Aligning Complex Molecular
Pathways Using 3D Models, Proceedings of Biomedical Engineering Society (BMES), Austin, TX, October
6-9, 2010.

S. Ayyadurai, Commentary: Innovation Demands Freedom, Nature India, December, 2009.

S. Ayyadurai, Modeling the Cell, Proceedings of BIO-IT Conference, In Silicon Modeling Section, Boston.
MA, April 2009.

S. Ayyadurai, Integration of Siddha with Systems Biology, Proceedings of Fullbright Conference 2009,
Kolkata, India, March 2009.

S. Ayyadurai, Eva Sciacca, C. Forbes Dewey, Jr., A Web Based Tool for Integration of Molecular Pathway
Models, Proceedings of BioInformatics and BioEngineering, 8th IEEE International Conference, 8-10 Oct.
2008.

S. Ayyadurai, Mission of Systems Biology, Bio-IT Beyond Genome Conference Proceedings, June
2008.

S. Ayyadurai, C.F. Dewey, Jr., Scaleable methods for large molecular pathway calculations: application to
EGFR, In Biomedical Engineering Society Annual Fall Meeting, Los Angeles, September 2007.

K. R. Stiehl, K. Dang, S. Ayyadurai, B.-S Seah, S. S. Bhowmick, C. Forbes Dewey, Jr., A New Approach to
Database Creation Using Ontologies: OWLdb. K. Dang, K. R. Stiehl , S. Ayyadurai, B.-S Seah, S. S.
Bhowmick, C. F. Dewey, Jr., An Information Architecture to Support Molecular Pathway

S. Ayyadurai, C.F. Dewey, Jr., Integrating an Ensemble of Biochemical Network Models, In International Society of Computational Biology (ISCB 2007), Vienna, July 2007.

S. Ayyadurai, Cytosolve, In proceedings of the Singapore MIT Symposium for Computational and
Systems Biology, January 2007.

S. Ayyadurai, Integrating Biological Pathway Models, In MIT CSBi Oktoberfest Proceedings, Cambridge, October, 2006

S. Ayyadurai, C. Forbes Dewey, Jr., C. Tan, Distributed Computing of Complex Collections of Biological Pathways, In World Congress on Medical Physics and Biomedical Engineering (WC 2006), Seoul, August-September 2006.

S. Ayyadurai, C. F. Dewey, Jr., J. Bassingthwaighte, J. Butterworth, P. Villiger, P. Hunter, Normalization

of Biological Pathways, In World Congress on Medical Physics and Biomedical Engineering (WC

2006), Seoul, August-September 2006.

S. Ayyadurai, C.F. Dewey, Jr., Cytosolve: A Distributed Computational Architecture for the Integration of

Biomolecular Pathways, In Biomedical Engineering Society Annual Meeting, Chicago, September

2006.

C. F. Dewey, Jr., S. Ayyadurai, V. Rouilly, C. L. Poh, S. S. Bhowmick, J. Evans, R. I. Kitney, Footprints in

the Sand: Supporting External Analysis of Medical and Biological Databases, In World Congress on

Medical Physics and Biomecal Engineering (WC 2006), Seoul, August-Sept 2006.

S. Ayyadurai, Modeling Actin Polymerization as a System of Integrated Biomolecular Pathways, In

Proceedings of the Annual MIT CSBi Oktoberfest, October 2005.

S. Ayyadurai, C.F. Dewey, Jr., Computing unsteady phenomenon across multiple molecular pathways,

In Biomedical Engineering Society Annual Meeting, Washington, D.C., September 2005.

S. Ayyadurai, S. A. Cimaszewski, J. H. Williams, Jr.: Unsupervised Classification of Fiber Composite

Interphases, In Proceedings of the Second International Conference on Acusto-Electronics, The American

Society of Nondestructive Testing, June 24-25, 1993.

A. Gupta, M. V. Nagendraprasad, A. Liu, Patrick Shen-Pei Wang, S. Ayyadurai: An Integrated Architecture for Recognition of Totally Unconstrained Handwritten Numerals, In International Journal of

Pattern Recognition and Artificial Intelligence, Vol. 7, No. 4, pp. 757-773, 1993.

G. V. Novakovic, L. E. Freed, S. Ayyadurai, H. Bernstein, Robert S. Langer and C. L. Cooney, Fluid-

Dynamic Study of the Enzymatic Fluidized Bed Reactor for Blood Dehparinization, Fluidization VI, In

Proceedings of the International Fluidization Conference, Banff, Canada, May 1989.

S. Laxminarayan, O. Mills, L. Rajaram, S. Ayyadurai, L.P. Michelson, Sleep Stage and Apnea Pattern

Analysis, In Proceedings of the International Conference on Medical and Biological Engineering, Espoo,

Finland, August 1985.

Books

The Climate of Science

August 2019

The Future of Email: What We Must Do to Protect Ourselves

A review of email's origin and where email is going including opportunities and dangers.

Publisher: General Interactive, Cambridge, 2016

Systems Health

A three-volume set that is the text book for the Systems Health® course.

Publisher: General Interactive, Cambridge, 2016

The Science of Everything

An integration of eastern medicine & western systems theory to reveal the "science of everything."

Publisher: General Interactive, Cambridge, 2016

Your Body, Your System

How to achieve health and well-being by treating the body as a complex system of systems.

Publisher: General Interactive, Cambridge, 2016

The System and Revolution

Provides an accessible guide to power of systems thinking and how it can revolutionize everything.

Publisher: General Interactive, Cambridge, 2015

The EMAIL Revolution: Unleashing the Power to Connect

Provides the history of email and how modern AI is advancing email across major organizations: small

and large.

Publisher: Skyhorse & Penguin, New York, 2013

The Internet Publicity Guide: How to Maximize your Marketing and Promotion in Cyberspace

Educational guide for online retailers on how to build sales through the emerging online medium.

Publisher: Allworth Press, New York, 1997

Arts and The Internet: A Guide to the Revolution

A guide to educate artists on the power of the Internet for new forms of art and distribution.

Publisher: Allworth Press, New York, 1996

Honors and Awards

"Star" Scientist in Feature Documentary *Poisoning Paradise*

Poisoning Paradise winner of multiple film awards, 2019

Inventor of Email Honor by Government of Argentina

Invited by the Government of Argentina, Tucuman Province and the University of Technology National to give lectures on innovation, June, 2019

Clinical Research Summit 2019

Distinguished Lecture Award, March, 2019

State of the Art Lecture Award

American Society for Clinical Pharmacology and Therapeutics, 2017

MIT Presidential Fellows Distinguished Lecture

Selected to give annual MIT Presidential Fellows Lecture, September 2017

#1 Reviewer's Choice for The Future of Email Book

Midwest Book Review: Small Press Bookwatch, 2017

Email @33: Inventor of Email Honoring

Digital India Foundation, September 2015

Serial Entrepreneur of the Year

Entrepreneur Magazine, 2015

Nominated National Medal of Technology and Innovation (NMTI)

US Patent and Trademark Office, September 2014

Livingston Hall of Fame

Livingston Educational Foundation (LEF), June 2014

ASSIST World Records Research Foundation Honorary Award

ASSIST World Records Research Foundation, Puducherry, India July 2013

Honorary Doctorate

Vinayaka Missions University, Salem, India July 2013

SKP Lifetime Achievement Award for Science and Technology

SKP Engineering College, Tiruvannamallai, India July 2013

Sri Sakthi Institute of Technology Lifetime Achievement Award

Sri Sakthi Institute of Technology, Coimbatore, **India July 2013**

The Smithsonian's National Museum of American History Acceptance of EMAIL papers, artifacts

National Museum of American History, The Smithsonian Institution, Washington D.C, February 16, 2012

The Man Who Invented Email

Time Magazine, November, 2011

First Outstanding Scientist and Technologist of Indian Origin (STIO/H)

Council of Scientific and Industrial Research (CSIR), India, 2009

Fulbright Scholar

US Fulbright, Washington, DC, 2008-2009

Travel Fellowship Award

ISMB 2007, Vienna, Austria, 2007

Fulbright Scholar

US Fulbright, Washington, DC, 2007

Graduate Research Fellowship

SMA Graduate Research Fellowship, 2004-2007

Communications Solutions ™ Product of the Year Award

EchoMail RMOS Product Suite, November, 2003

Customer Interactive Solutions, TMC Labs Innovation Award

EchoMail Customer Care, September, 2002

Massachusetts Interactive Media Council Award (MIMC)

Customer Support Applications, EchoMail CC/BI (Finalist) 2002

Silver Pencil Award, Integrated Branding

Wieden & Kennedy/EchoMail, cK one E-Mail Campaign, 2001

Lotus Beacon Award

EchoMail RMOS Product Suite, 2000

Best of Class Internet Commerce Expo

Customer Service & Fulfillment, EchoMail CC, 1999

Massachusetts Interactive Media Council Award (MIMC)

Groupware/Collaborative Website (Finalist) World Music , 1998

Massachusetts Interactive Media Council Award (MIMC)

Non-Profit/Public Service Online, AccessExpressed.org Online Community (Finalist), 1998

Who's Who in America

Since 1997

IBM/Lotus Beacon Award

Best Messaging Solution, EchoMail Suite, 1997

Massachusetts Interactive Media Council Award

Best E-Mail/ Fax Application, EchoMail suite, 1997
Discover Magazine Award for Technical Innovation
XIVATM Core Technology, 1996
Lemelson-MIT Award for Innovation
XIVATM Core Technology (Finalist), 1996
Verizon (formerly GTE/BBN) Technologies Award
ProVision Award, Interactive Marketing Creative Direction, 1996
PCWeek's Web Site of the Week
Harvard-Square.com Online Community, 1996
Best of Europe Online
Arts-Online.com Online Community, 1996
Yahoo! #1 What's Cool
Harvard-Square.com Online Community, 1996
IBM Best Online Community
Harvard-Square.com Online Community, 1996
DISNEY EPCOT Center Award for Exhibit
Selected to be in Innoventions Exhibit, 1996
First Place, Competition for Automatic Categorization of Electronic Mail
Office of the President, White House, Washington, DC, November, 1994.
Winner, Automatic Categorization of SGML Tagged Documents
Information Handling Services (IHS), Boulder, CO, 1993.
International Fellowship Research Grant, Research in the Cross-Language Translators
Sloan School of Management and Industrial Liaison Program and the Italian Trade Commission, MIT,
Cambridge, MA, 1992.
Elected Session Chairman, Session on Scientific Visualization
International IEEE EMBS Conference, Institute of Electrical and Electronics Engineers (IEEE),
Philadelphia, PA, 1991
Founder and Organizer, Session on Scientific Visualization
International IEEE EMBS Conference, Institute of Electrical and Electronics Engineers (IEEE), Seattle,
WA, 1990.
Full Member, SIGMA XI
Since 1989
SIGMA XI UROP Award for Outstanding Undergraduate Research
1985
MIT Mennen Scholar
1982-1986
Tau Beta Pi
1984.
ETA KAPPA NU
1984
VI-A Hewlett-Packard COOP Assignment
Biomedical Division, Andover, MA 1983
MIT Varsity Soccer
1982

Awarded Westinghouse Science Talent Search Award
1981
Thomas Alva Edison/Max McGraw Finalist
1981
Accepted to American Legion Jersey Boys State Program
1981
Outstanding Statesman Award, American Legion Jersey Boys State
1981
All-County Soccer Champions
Essex County, New Jersey, 1981
Individual First Place in Advanced Mathematics at New Jersey State Mathematics Competition
1981
Accepted to Gifted Students Program
New York University Program in Computer Science at Courant Institute of Mathematical Sciences for
gifted students in Eighth Grade of Junior High School, 1977
Patents
Patent No. 6,668,281, V.A. Shiva Ayyadurai, "Relationship management system and method using
asynchronous electronic messaging", April 6, 2004.
Patent No. 6,718,368, V.A. Shiva Ayyadurai, "System and method for content-sensitive automatic reply
message generation for text-based asynchronous communications", April 6, 2004.
Patent No. 6,718,367, V.A. Shiva Ayyadurai, "Filter for modeling system and method for handling and
routing of text-based asynchronous communications", April 6, 2004.
Research and Thesis Supervision
Ceryen Tan, **MIT UROP Project,** Biological Engineering, **Title:** SBML API Programming for Biological
Systems Integration, 2005.
Steven A. Cimaszewksi, **MIT Masters Thesis**, Mechanical Engineering, **Title**: Statistical Analysis of Fiber
Composite Interphase Inverse Problem, 1994.
Peter L. Sparks, **MIT Bachelors Thesis**, Electrical Engineering, **Title**: A Hybrid Method for Segmenting
Numeric Character Strings, 1991.
Matthew J. Labrador, **MIT Bachelors Thesis**, Electrical Engineering, **Title**: The Generalized Mass-Spring
Lattice Model with Damping : A Lagrangian Dynamics Approach, 1990.
Professional Societies
TIE, Charter Member
Tau Beta Pi, Lifetime Member
Sigma Xi, Full Member
Eta Kappa Nu, Member
Oxford-Cambridge Society, Member

The Indus Enrepreneur (TIE), Charter Member
Biomedical Engineering Society (BMES), Student Member
Skills
Programming Languages
C++, C, Java, HTML, ASP
Foreign Languages
Spanish, Italian, Tamil, Hindi
General Skills
Problem Solving, Writing, Teaching and Lecturing, Fundraising, Research, Proposal
Development,
Software Architecture, Design and Development, User Interface Design, Mathematical
Modeling,
Organizational and Business Development, Crisis Management, Mentoring and Career
Development,
Negotiations
Invited Lectures (selected ones)
Associatoin of Systems Pharmacologists
Karunya University, National Level Symposium
Address: Inventions and Innovations for Sustainable Development
Coimbatore, India March 2014
Hindustan Educational Institutions
Address: Innovate to Lead
Coimbatore, India March 2014
Indian Institute of Technology, Mumbai
Address: Innovation Anytime, Anyplace by Anybody
Mumbai, India March 2014
Indian Institute of Technology, Delhi
Address: Innovation Anytime, Anyplace by Anybody
New Delhi, India March 2014
Penguin Publication Book Tour
Address: The EMAIL Revolution
India, March 12 to March 25, 2014
Chopra Center: Journey to Healing
Address: Systems Health
San Diego, CA March 2014
Sages and Scientists
Address: Systems and Revolution
San Diego, CA August 2013
MIT Conversations on Sociotechnical Systems
Address: Rethinking Narrative and Systems of Innovation: Innovation Anytime, Anyplace by
Anybody
MIT, Cambridge, MA October 2013
Chopra Center: Journey to Health
Address: Systems Health
San Diego, CA August 2013
Hindustan University

Address: Innovation Anytime, Anyplace by Anybody
Chennai, India July 2013
Velammal Vidyalaya
Address: Innovation Anytime, Anyplace by Anybody
Chennai, India July 2013
SCAD Engineering College
Address: Innovation Anytime, Anyplace by Anybody
Tirunelveli District, India July 2013
PSR Engineering College
Address: Innovation Anytime, Anyplace by Anybody
Sivakasi, India July 2013
Kalasalingam University
Address: Innovation Anytime, Anyplace by Anybody
Virudhunagar, India July 2013
Kalaignar Institute of Technology
Address: Innovation Anytime, Anyplace by Anybody
Coimbatore, India July 2013
Sri Sakthi Institute of Technology
Address: Innovation Anytime, Anyplace by Anybody
Coimbatore, India July 2013
SCAD Engineering College
Address: Innovation Anytime, Anyplace by Anybody
Coimbatore, India July 2013
Akshara Vidyaashram
Address: Innovation Anytime, Anyplace by Anybody
Cuddalore, India July 2013
CK College of Engineering & Technology
Address: Innovation Anytime, Anyplace by Anybody
Cuddalore, India July 2013
Sathyabama University
Address: Overcoming Hurdles and Believing in Oneself to Fulfill One's Destiny
Chennai, India July 2013
Infosys
Address: How Innovation can Happen: Innovation Anytime, Anyplace by Anybody
Chennai, India July 2013
GT Aloha Vidyamandir
Address: Integrate and Innovate
Chennai, India July 2013
Vellore Institute of Technology
Address: Siddha: The First Systems Biology
Vellore, India July 2013
Sri Sairam Engineering college & Sri Sairam Homoeopathy Medical College
Address: Innovation and the Invention of Email / Integration of Ancient and Alternative
Medicine
Systems
Chennai, India July 2013

Sona University
Address: Innovation Anytime, Anyplace by Anybody
Salem, India July 2013
Vinayaka Missions University
Address: Innovation Can Happen Anywhere
Salem, India July 2013
Sastha Tamil Foundation
Address: Innovation and Systems
Plano, TX April 2013
The Consortium of Health and Military Performance
Address: A Revolution in Medical Education
Uniformed Universities of Health Sciences, April 2013
MIT Traditional Medicines Society
Address: EAST MEETS WEST: Traditional Medicines + Modern Systems Biology
MIT, Cambridge, MA February 5, 2013 to April 21, 2013
MIT Biological Engineering Department Lecture Series
Address: EAST MEETS WEST: Traditional Medicines + Modern Systems Biology
MIT, Cambridge, MA September 9, 2011 to December 5, 2011
MIT Lecture Series
Address: EAST MEETS WEST: Traditional Medicines + Modern Systems Biology
MIT, Cambridge, MA September 9, 2010 to December 9, 2010
Customer Response Summit
Address: PREDICTING THE FUTURE: Are You REALLY Ready to Listen?
Westin Kierland Resort & Spa, Scottsdale, AZ November 3rd & 4th, 2010
Visual Interpretations Conference
Address: Collaborative Cave Drawings of Social Interactions: Simple Visualizations of Complex
Phenomena humanities + digital Visual Interpretations Conference @ MIT, Cambridge, MA
May 2010
BIO-IT Conference In Silico Biology
Address: Modeling the Cell
BIO-IT Conference, Boston, MA April 2009
Sri Ramachandra University
Address: Integration of Yogic Science and Systems Biology
Sri Ramachandra University, Chennai, IN, March 2009
SIAM Conference on Multi-Scale Systems
Address: Scalable Architecture for Integrating Multiple Biological Pathway Models
Montreal, CANADA August 2008
Genome Biology Conference - KEYNOTE SPEAKER
Address: The Mission of Systems Biology
Genome Biology Conference, San Francisco, CA June 2007
MIT UROP Panel
Address: Opportunities for Research at MIT
MIT UROP, Cambridge, MA February 2007
MIT Singapore Symposium
Address: Cytosolve
SMA Alliance Symposium, Singapore, January 2007

MIT GAME Seminar
Address: Modeling the Cell
Graduate Mechanical Engineering Students Seminar, Cambridge, MA 2005
Effective E-Mail Marketing Campaigns
Address: Measure your Success: New Metrics for E-Mail Marketing
The Institute for International Research, San Francisco, CA, February 2002
Excellence in E-CRM Conference
Address: The Big Lie of CRM
Allstate Corporation Conference Center, Northbrook, Ill. November 2001
E-Marketing / E-Service Seminar Series
Address: E-Mail Project Solutions
Cambridge Education Center, Cambridge, MA December 2001
EU Conference: Artificial Intelligence
How to Increase Banking Business and Open New Dialogue with On-line Customers
Address: E-Business Strategies for CRM
Realvision Vicenza e NTI UK Italia, *Vicenza, Italy, June 2001*
Pre-Conference Lecture, E-Mail2001 @ MIT Conference
Keynote Address: The Pulse of the Industry
Becton, Dickinson and Company, Franklin Lakes, New Jersey, May 2001
Nothing But New Forum at Fidelity Center for Applied Technology
Keynote Address: E-Mail Marketing Strategies
Fidelity Center for Applied Technologies, *Boston, MA, April 2001*
E-Mail2001@MIT Conference: Intelligent Life
Keynote Address: The Corporate Nervous System
MIT University Park Hotel, *Cambridge, MA, January 2001*
Southern India E-Commerce Conference 2000
Keynote Address: E-Mail = E-Commerce
Advertising Club of Madras, *Chennai, India, December 2000*
Le Potenzialita del Marketing On-line in Italy
Keynote Address: Marketing On-line in Italy: How It Can Be Done
Brodeur Image Time, *Milan, Italy, December 2000*
2000 General Motors Dealer Summit
Keynote Address: eCRM - How E-Mail Helps Your Business
Maritz Performance Improvement Company, *Scottsdale, AZ, October 2000*
Producing Sales in Call Centers
Keynote Address: Implementing Interactive Web
Institute of International Research, *Washington, D.C., June 2000*
Measuring and Managing the Quality of E-Mail Response
Keynote Address: Using Automated Systems to Improve E-Mail Response
InfoCast, *San Francisco, CA, May 2000*
JCPenney Internet Day
Keynote Address: E-Mail - The Ultimate Relationship Builder
JCPenney, *Huston, TX, May 2000*
Annual Investment Conference for Private Companies
Keynote Address: Electronic Customer Relationship Management
Massachusetts Software and Internet Council, World Trade Center, *Boston, MA, April 2000*

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Innovators Breakfast Series
Open Discussion: The eCRM Problem
Massachusetts Institute of Technology, New York Academy of Sciences, *New York, NY, April 2000*
Innovators Breakfast Series
Open Discussion: The Power of E-Mail - Brand Loyalty in Real Time
Massachusetts Institute of Technology, National Press Club, *Washington, D.C., April 2000*
American Express, Naples Conference
Keynote Address: Electronic Customer Relationship Management
American Express, *Naples, FL, March 2000*
American Express, Bermuda Conference
Keynote Address: Electronic Customer Relationship Management
American Express Delivery Group, *South Hampton, Bermuda, March 2000*
Customer E-Mail Management
Keynote Address: Using Automated Systems to Improve E-Mail Response
International Quality & Production Center, *London, England, February 2000*
GM e-Wow Speaker Series: Building Customer Relationships Online
Keynote Address: Electronic Customer Relationship Management
General Motors Global Brand Management College, *Detroit, Michigan, February 2000*
Innovators Breakfast Series
Open Discussion: Is software That Answers E-Mail Automatically the Future of On-line Marketing?
Massachusetts Institute of Technology, *Cambridge, MA, February 2000*
Internet Customer Relationship Management
Keynote Address: Electronic Customer Relationship Management
The Institute for International Research, *San Diego, CA, January 2000*
Electronic Commerce World 1999 Conference
Educational Track: E-Mail--The Ultimate Relationship Builder
EC World 2001 Conference, *Orlando, FL, October 1999*
Technology Based Customer Care ICM Conference
Keynote Address: E-Mail = E-Commerce
ICM Conferences, Atlanta, *Georgia, February 1999*
DISNEY INSTITUTE/ OOPS Conference
Address: Object Oriented Programming, 1998
Other Seminar Leaders: Alan Kay
Books and Chapters in Books
The EMAIL Revolution
Author: V.A. Shiva
Publisher: Allworth Press, New York, 1997
E-Mail: The Ultimate Relationship Builder, Volume (In Progress)
Volume I, Volume II, Volume II
Author: V.A. Shiva
The Internet Publicity Guide: How to Maximize your Marketing and Promotion in Cyberspace
Author: V.A. Shiva
Publisher: Allworth Press, New York, 1997

Arts and The Internet: A Guide to the Revolution,
Author: V.A. Shiva
Publisher: Allworth Press, 1996, New York
Chapter on Electrodynamics, Dynamics,
Chapter in Book by Prof. Williams
Chapter in Communications Arts
Computer Assisted Automatic Indexing
Document Analysis Conference, October, 1994
Author: V.A. Shiva Ayyadurai, Submitted for Publication
Unsupervised Hierarchical Clustering of Fiber Interphases for Materials Classification
American Society of Non-Destructive Testing (ASNT) Conference, April, 1993
Authors: V.A. Shiva Ayyadurai, S. Cimaszewski, J.H. Williams. Jr.
Neural Network Based Hybrid System for Handwritten Character Recognition
Sloan School of Management Technical Report Fall, 1991
Author: Shiva Ayyadurai
Visualization of Wave Propogation in Anisotropic Media
Master of Science Thesis, MIT Media Laboratory February, 1990
Author: S. Ayyadurai
A Workstation for Particle Motion and Flow Analysis
IEEE Computers in Medicine, New Orleans, LA, November, 1988
Authors: Ayyadurai, Novakovic, Gordana, Langer, Bob
Blood Deheparinization in a Fluidized Bed Reactor
Proceedings of the Canadian Conference on Fluid Dynamics, 1987
Author: Novakovic, G., Ayyadurai, S., Michelson, L.
Prototype Expert System for Bridge Deck Deteriorization
Project Report to NSF, September, 1986
Authors: Maser, Ken, Schott, Jean-Pierre, Ayyadurai, Shiva
Sleep Stage and Apnea Pattern Analysis, pp. 505-506
Journal of the International Federation of Medical and Biological Engineering, Espoo Finland, August, 1985
Authors: Laximinarayan, S. Ayyadurai, S., Michelson, L.,
Ayyadurai's Four Point Theorem
The Mathematics Teacher, Spring, 1981
Author: Shiva Ayyadurai
Industry RFP Awards
Allstate Corporation, Business Intelligence and Customer Care Technology ($1,500,000.00)
AT & T, Business Intelligence and Customer Care Technology ($120,000.00)
American Express, Business Intelligence and Customer Care Technology ($4,120,000.00)
BancOne Services Corporation, Business Intelligence and Customer Care Technology ($920,000.00)
BThree (Warner), Business Intelligence and Customer Care Technology ($520,000.00)
Bausch & Lomb, Business Intelligence and Customer Care Technology ($25,000.00)
Becton Dickinson, Business Intelligence and Customer Care Technology ($1,110,000.00)
Bush for President, Inc., Business Intelligence and Customer Care Technology ($820,000.00)
Cendant, Business Intelligence and Customer Care Technology ($20,000.00)
Citigroup, Business Intelligence and Customer Care Technology ($3,150,000.00)

Calvin Klein Cosmetics Company, Business Intelligence and Customer Care Technology ($830,000.00)

Classified Ventures, Inc., Business Intelligence and Customer Care Technology ($710,000.00)

Dial Corporation, Business Intelligence and Customer Care Technology ($110,000.00)

Entertainment Media Services, Inc., Business Intelligence and Customer Care Technology ($150,000.00)

Fireman's Fund Insurance Company, Business Intelligence and Customer Care Technology ($80,000.00)

Gateway, Business Intelligence and Customer Care Technology ($1,170,000.00)

GEICO, Business Intelligence and Customer Care Technology ($2,250,000.00)

Hasbro Interactive, Inc., Business Intelligence and Customer Care Technology ($510,000.00)

Hershey Foods Corporation, Business Intelligence and Customer Care Technology ($9,500.00)

Hilton Hotel, Business Intelligence and Customer Care Technology ($1,050,000.00)

HomePortfolio, Inc., Business Intelligence and Customer Care Technology ($315,000.00)

The IT Group, Business Intelligence and Customer Care Technology ($25,000.00)

John Hancock Financial Services, Business Intelligence and Customer Care Technology ($660,000.00)

JCPenney, Business Intelligence and Customer Care Technology ($5,230,000.00)

LA Times, Business Intelligence and Customer Care Technology ($20,000.00)

Lycos, Inc., Business Intelligence and Customer Care Technology ($670,000.00)

Kimberly Clark Corporation, Business Intelligence and Customer Care Technology ($130,000.00)

People, Business Intelligence and Customer Care Technology ($120,000.00)

Procter & Gamble Company, Business Intelligence and Customer Care Technology ($340,000.00)

Purina, Business Intelligence and Customer Care Technology ($280,000.00)

QVC, E-Mail Management: Inbound and Outbound E-Mail ($890,000.00)

Rx.com, Inc., Business Intelligence and Customer Care Technology ($70,000.00)

Salomon Smith Barney, Business Intelligence and Customer Care Technology ($120,000.00)

Silicon Graphics, Inc., Business Intelligence and Customer Care Technology ($310,000.00)

Sprint Spectrum, Business Intelligence and Customer Care Technology ($850,000.00)

TELUS Corporation, Business Intelligence and Customer Care Technology ($90,000.00)

Time Incorporated, Business Intelligence and Customer Care Technology ($45,000.00)

Turner Entertainment, Business Intelligence and Customer Care Technology ($9,500.00)

United States Senate, Business Intelligence and Customer Care Technology ($890,000.00)

Unilever Consumer Services, Business Intelligence and Customer Care Technology ($780,000.00)

Professional ART RFP Awards

Aaron Concert Management, Art Promotional Support Online Branding Grant ($15,000.00)

American Indian Contemporary Arts, Art Promotional Support Online Branding Grant ($15,000.00)

Allworth Press, Art Promotional Support Online Branding ($15,000.00)

Alvin Ailey American Dance Theater, Art Promotional Support Online Branding Grant ($80,000.00)

Art Complex Museum, Art Promotional Support Online Branding Grant ($15,000.00)

Boston Ballet, Art Promotional Support Online Branding Grant ($40,000.00)

Boston Casting Company, Art Promotional Support Online Branding Grant ($15,000.00)
Cambridge Art Cooperative, Art Promotional Support Online Branding Grant ($15,000.00**)**
Cambridge Multi-Cultural Art Center, Art Promotional Support Online Branding Grant ($15,000.00)
Dance Umbrella, Art Promotional Support Online Branding Grant ($15,000.00)
Fashion Cafe, Art Promotional Support Online Branding ($15,000.00)
Green Linnet/Xeonphile, Art Promotional Support Online Branding ($15,000.00)
Handle & Haydn Society, Art Promotional Support Online Branding Grant ($15,000.00)
Honolulu Academy of Arts, Art Promotional Support Online Branding Grant ($15,000.00)
International Arts Manager, Art Promotional Support Online Branding Grant ($15,000.00)
Houston Ballet, Art Promotional Support Online Branding Grant ($15,000.00)
Lyric Stage, Art Promotional Support Online Branding Grant ($15,000.00)
MMC Recordings, Art Promotional Support Online Branding ($15,000.00)
MUSICIAN Magazine, Art Promotional Support Online Branding ($40,000.00)
National Association Performing Artists Managers of America (NAPAMA), Online
Branding Grant
($15,000.00)
New Age Voice, Art Promotional Support Online Branding Grant ($15,000.00)
Poetry Alive! Art Promotional Support Online Branding Grant ($15,000.00)
Sedia Furniture Design, Art Promotional Support Online Branding Grant ($15,000.00)
Sculpture Review, Art Promotional Support Online Branding Grant ($15,000.00)
Strand Theater, Art Promotional Support Online Branding Grant ($15,000.00)
Very Special Art, National, Art Promotional Support Online Branding Grant ($70,000.00)
Very Special Art, Massachusetts, Art Promotional Support Online Branding Grant
($30,000.00)
World Music, Art Promotional Support Online Branding Grant ($15,000.00)
Young Concert Artists, Art Promotional Support Online Branding Grant ($15,000.00)
ZIMA, Art Promotional Support Online Branding Grant ($15,000.00)
PROFESSIONAL ART WORKSHOPS
Arts & The Internet
Art Promotional Through Online Branding
Arts & The Internet: A Guide to the Revolution
Empowering the artist and art organization to reach a global audience, using new technological
tools.
MIT Classroom of the Future, 1996
Research Interests
Mathematical Modeling, Email Technologies, Systems Thinking, Organizational Structure and
Planning, User Interface Design, Visual Arts, Politics, Nutrition & Health
Community Interests
MIT Graduate Alumni Consortium for Improving MIT Community, Very Special Arts, World
Music, Read Across America, Spare Change, The Meena Scholarship Fund for Gifted South
Indian Students, Kauai Hindu Temple Construction Fund