Tom Chittenden, PhD, DPhil, DSPE

BullFrog AI · University of Oxford

Greater Boston · **Contact Info**

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About

As an accomplished GIGA Society Fellow with over 25 years of experience in experimental... see more

Activity

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We were honored to host Eric Schadt, a...

Liked by Tom Chittenden, PhD, DPhil, DSPE

Radcliffe Square at night ✨ 📷...

Liked by Tom Chittenden, PhD, DPhil, DSPE

Peace & innovation are two forces that...

Liked by Tom Chittenden, PhD, DPhil, DSPE

Experience & Education

BullFrog AI

Licenses & Certifications

Honored Listee

Marquis Who's Who

Issued Nov 2023 · Expires Dec 2029

Credential ID

903a9272a4b24da7bb4081effcbc2c3c81892d5e924d48018203c82e1c717587

See credential

Accredited Professional Statistician (PStat)

American Statistical Association - ASA

Issued Jan 2016 · Expires Dec 2026

Volunteer Experience

Diplomate, Chief Statistical Sciences Advisor, & Council Member

International Society for Philosophical Enquiry or ISPE

Nov 2024 - Present · 1 month

Science and Technology

I am an ISPE Diplomate. I serve as the Chief Statistical Sciences Advisor (CSSA) and Council Member of the Global Strategic Initiatives and Planning Committee for the International Society for Philosophical Enquiry (ISPE). Through these roles, I support the ISPE mission of promoting service to humanity through the exchange of thoughts, ideas, and discoveries among its members by advising on advances in the statistical sciences. These include collection, management, analysis, and interpretation...

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President, Diplomate, Chief Statistical Sciences Advisor, & Council Member

International Society for Philosophical Enquiry or ISPE

Aug 2024 - Oct 2024 · 3 months

Science and Technology

I am an ISPE Diplomate. I served as the President, Chief Statistical Sciences Advisor (CSSA), and Council Member of the Global Strategic Initiatives and Planning Committee for the International Society for Philosophical Enquiry (ISPE). Through these roles, I supported the ISPE mission of promoting service to humanity through the exchange of thoughts, ideas, and discoveries among its members by advising on advances in the statistical sciences. These included collection, management, analysis...

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President

GIGA Society

Oct 2023 - Present · 1 year 2 months

Science and Technology

As an experimental project of the GIGA Foundation, the GIGA Society is an extremely high-IQ society for those who have scored at or above IQ 190 (SD 15) on a validated high-range IQ assessment. The Society is an international platform, which fosters service to humanity through the exchange of thoughts, ideas, and discoveries among its members.

https://gigasociety.net/

Council Member

United Sigma Intelligence Association

Jan 2023 - Present · 1 year 11 months

Science and Technology

United Sigma Intelligence Association is an international think tank that supports intellectually gifted individuals to engage in rigorous scientific discourse to advance the fields of cognitive science and artificial intelligence

https://www.usiassociation.com/people

Vice President, Diplomate, Chief Statistical Sciences Advisor, & Council Member

International Society for Philosophical Enquiry or ISPE

Jul 2023 - Aug 2024 · 1 year 2 months

Science and Technology

As an ISPE Diplomate, I served as the Vice President, Chief Statistical Sciences Advisor (CSSA), and Council Member of the Global Strategic Initiatives and Planning Committee for the International Society for Philosophical Enquiry (ISPE). Through these roles, I supported the ISPE mission of promoting service to humanity through the exchange of thoughts, ideas, and discoveries among its members by advising on advances in the statistical sciences. These included collection, management, analysis,...

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President

United Sigma Intelligence Association

Aug 2021 - Jan 2023 · 1 year 6 months

Science and Technology

United Sigma Intelligence Association is an international think tank that supports intellectually gifted individuals to engage in rigorous scientific discourse to advance the fields of cognitive science and artificial intelligence.

https://www.usiassociation.com/people

Vice President for Data Sciences

United Sigma Intelligence Association

Jul 2020 - Aug 2021 · 1 year 2 months

Science and Technology

United Sigma Intelligence Association is an international think tank that supports intellectually gifted individuals to engage in rigorous scientific discourse to advance the fields of cognitive science and artificial intelligence

https://www.usiassociation.com/people

Industry Advisory Council Member

Alliance for Artificial Intelligence in Healthcare

Aug 2018 - Aug 2021 · 3 years 1 month

Health

The Alliance for Artificial Intelligence in Healthcare objective (AAIH) is to bring the A.I. healthcare industry together to effectively accelerate healthcare solutions by educating, advocating and promoting standard use of artificial intelligence to significantly improve biomedical research and healthcare systems.

https://www.theaaih.org/leadership

Advisory Board Member

Harvard Medical School

2015 - 2017 · 2 years

Science and Technology

BioGrids of the SBGrid Consortium works with HMS Tools and Technology supported initiatives to develop a comprehensive and collaborative support infrastructure by compiling and maintaining analytic software applications for the Harvard Medical School Community: http://www.biogrids.org/

Publications

An Ensemble AI Model for RET Alteration Detection Using H&E Images as a Putative Screening Tool for More Efficient Genomic Alteration Detection

AI in Precision Medicine · August 5, 2024

RET-activating gene alterations are present in 1%–2% of non-small cell lung cancers. Therapeutics that specifically and effectively target these RET alterations have recently been approved. Broad-based genomic testing, inclusive of RET fusions, is recommended by National Comprehensive Cancer Network (NCCN) and ASCO/AMP/CAP guidelines for patients with advanced non-small cell lung cancer, but screening patients for such rare biomarkers in drug development can be impractical and costly. Here, we...

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See publication

ATM-deficiency-induced microglial activation promotes neurodegeneration in ataxia-telangiectasia

Cell Reports · January 23, 2024

While ATM loss of function has long been identified as the genetic cause of ataxia-telangiectasia (A-T), how it leads to selective and progressive degeneration of cerebellar Purkinje and granule neurons remains unclear. ATM expression is enriched in microglia throughout cerebellar development and adulthood. Here, we find evidence of microglial inflammation in the cerebellum of patients with A-T using single-nucleus RNA sequencing. Pseudotime analysis revealed that

Identification of driver genes for critical forms of COVID-19 in a deeply phenotyped young patient cohort

Science Translational Medicine · January 19, 2022

The drivers of critical coronavirus disease 2019 (COVID-19) remain unknown. Given major confounding factors such as age and comorbidities, true mediators of this condition have remained elusive. We employed a multi-omics analysis combined with artificial intelligence in a young patient cohort where major comorbidities were excluded at the onset. The cohort included 47 “critical” (in the intensive care unit under mechanical ventilation) and 25 “non-critical” (in a non-critical care ward)...

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See publication

Unconventional AI/ML Systems for the Biomedical Sciences

Telicom · July 1, 2021

The world has witnessed extraordinary advancements over the past several decades in the collective understanding of biological processes at the molecular, cellular, and organismal levels. However, the current US biomedical research paradigm is no longer sustainable for its current purposes, nor up to the task of leading global innovation and ensuring that future breakthrough science is turned swiftly into benefits for people and patients.

In our 2015 Ex Laboratorio piece in BioEssays, my...

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Identification of driver genes for severe forms of COVID-19 in a deeply phenotyped young patient cohort

medRxiv · June 25, 2021

The etiopathogenesis of severe COVID-19 remains unknown. Indeed given major confounding factors (age and co-morbidities), true drivers of this condition have remained elusive. Here, we employ an unprecedented multi-omics analysis, combined with artificial intelligence, in a young patient cohort where major co-morbidities have been excluded at the onset. Here, we established a three-tier cohort of individuals younger than 50 years without major comorbidities. These included 47 “critical” (in the...

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Quantum processor-inspired machine learning in the biomedical sciences

Patterns · April 28, 2021

Recent advances in high-throughput genomic technologies coupled with exponential increases in computer processing and memory have allowed us to interrogate the complex molecular underpinnings of human disease from a genome-wide perspective. While the deluge of genomic information is expected to increase, a bottleneck in conventional high-performance computing is rapidly approaching. Inspired by recent advances in physical quantum processors, we evaluated several unconventional machine-learning...

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See publication

Questions on an agnostic AI system: A case study for an aortic aneurysm detection and other applications.

Journal of Precision Medicine · March 12, 2021

See publication

In silico phenotype projection of endothelial ERK1/2 signaling

Aging · June 12, 2020

See publication

Smooth Muscle Cell Reprogramming in Aortic Aneurysms

Cell Stem Cell · April 2, 2020

The etiology of aortic aneurysms is poorly understood, but it is associated with atherosclerosis, hypercholesterolemia, and abnormal transforming growth factor β (TGF-β) signaling in smooth muscle. Here, we investigated the interactions between these different factors in aortic aneurysm development and identified a key role for smooth muscle cell (SMC) reprogramming into a mesenchymal stem cell (MSC)-like state. SMC-specific ablation of TGF-β signaling in Apoe-/- mice on a hypercholesterolemic...

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See publication

Chronic mTOR activation induces a degradative smooth muscle cell phenotype

Journal of Clinical Investigation · February 10, 2020

Smooth muscle cell (SMC) proliferation has been thought to limit the progression of thoracic aortic aneurysm and dissection (TAAD) because loss of medial cells associates with advanced disease. We investigated effects of SMC proliferation in the aortic media by conditional disruption of Tsc1, which hyperactivates mTOR complex 1. Consequent SMC hyperplasia led to progressive medial degeneration and TAAD. In addition to diminished contractile and synthetic functions, fate-mapped SMCs displayed...

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See publication

Resilience, disease and the age of single cell science

Aging · February 10, 2020

See publication

Unconventional machine learning of genome-wide human cancer data

arXiv - Quantum Physics · September 12, 2019

Recent advances in high-throughput genomic technologies coupled with exponential increases in computer processing and memory have allowed us to interrogate the complex aberrant molecular underpinnings of human disease from a genome-wide perspective. While the deluge of genomic information is expected to increase, a bottleneck in conventional high-performance computing is rapidly approaching. Inspired in part by recent advances in physical quantum processors, we evaluated several unconventional...

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Endothelial TGF-β signalling drives vascular inflammation and atherosclerosis

Nature Metabolism · August 26, 2019

Atherosclerosis is a progressive vascular disease triggered by interplay between abnormal shear stress and endothelial lipid retention. A combination of these and, potentially, other factors leads to a chronic inflammatory response in the vessel wall, which is thought to be responsible for disease progression characterized by a buildup of atherosclerotic plaques. Yet molecular events responsible for maintenance of plaque inflammation and plaque growth have not been fully defined. Here we show...

Show more

See publication

Endothelial ERK1/2 signaling maintains integrity of the quiescent endothelium

Journal of Experimental Medicine · June 13, 2019

To define the role of ERK1/2 signaling in the quiescent endothelium, we induced endothelial Erk2 knockout in adult Erk1−/− mice. This resulted in a rapid onset of hypertension, a decrease in eNOS expression, and an increase in endothelin-1 plasma levels, with all mice dying within 5 wk. Immunostaining and endothelial fate mapping showed a robust increase in TGFβ signaling leading to widespread endothelial-to-mesenchymal transition (EndMT). Fibrosis affecting the cardiac conduction system was...

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See publication

Enhancing Retrosynthetic Reaction Prediction with Deep Learning Using Multiscale Reaction Classification

Journal of Chemical Information and Modeling · January 14, 2019

Chemical synthesis planning is a key aspect in many fields of chemistry, especially drug discovery. Recent implementations of machine learning and artificial intelligence techniques for retrosynthetic analysis have shown great potential to improve computational methods for synthesis planning. Herein, we present a multiscale, data-driven approach for retrosynthetic analysis with deep highway networks (DHN). We automatically extracted reaction rules (i.e., ways in which a molecule is produced)...

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See publication

Melanocortin-4 receptor pathway dysfunction in obesity: Patient stratification aimed at MC4R agonist treatment

The Journal of clinical endocrinology and metabolism · May 2, 2018

Abstract

CONTEXT:
The hypothalamic melanocortin 4 receptor (MC4R)-pathway serves a critical role in regulating bodyweight. Loss of function (LoF) mutations in the MC4R pathway including mutations in the POMC (1), PCSK1, LEPR (2) or the MC4R genes (3) have been shown to be causative of early-onset severe obesity.

METHODS:
Through a comprehensive epidemiological analysis of known and predicted LoF variants in the POMC, PCSK1 and LEPR genes, we sought to estimate the number of...

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See publication

Shear-induced Notch-Cx37-p27 axis arrests endothelial cell cycle to enable arterial specification.

Nature Communications · December 15, 2017

Establishment of a functional vascular network is rate-limiting in embryonic development, tissue repair and engineering. During blood vessel formation, newly generated endothelial cells rapidly expand into primitive plexi that undergo vascular remodeling into circulatory networks, requiring coordinated growth inhibition and arterial-venous specification. Whether the mechanisms controlling endothelial cell cycle arrest and acquisition of specialized phenotypes are interdependent is unknown. Here...

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See publication

Aging and neurodegeneration are associated with increased mutations in single human Neurons.

Science · December 7, 2017

It has long been hypothesized that aging and neurodegeneration are associated with somatic mutation in neurons; however, methodological hurdles have prevented testing this hypothesis directly. We used single-cell whole-genome sequencing to perform genome-wide somatic single-nucleotide variant (sSNV) identification on DNA from 161 single neurons from the prefrontal cortex and hippocampus of fifteen normal individuals (aged 4 months to 82 years) as well as nine individuals affected by early-onset...

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See publication

FGF-dependent metabolic control of vascular development.

Nature · May 3, 2017

Blood and lymphatic vasculatures are intimately involved in tissue oxygenation and fluid homeostasis maintenance. Assembly of these vascular networks involves sprouting, migration and proliferation of endothelial cells. Recent studies have suggested that changes in cellular metabolism are important to these processes. Although much is known about vascular endothelial growth factor (VEGF)-dependent regulation of vascular development and metabolism, little is understood about the role of...

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See publication

Cell types differ in global coordination of splicing and proportion of highly expressed genes

Scientific Reports · August 31, 2016

Balance in the transcriptome is regulated by coordinated synthesis and degradation of RNA molecules. Here we investigated whether mammalian cell types intrinsically differ in global coordination of gene splicing and expression levels. We analyzed RNA-seq transcriptome profiles of 8 different purified mouse cell types. We found that different cell types vary in proportion of highly expressed genes and the number of alternatively spliced transcripts expressed per gene, and that the cell types...

Show more

Other authors

See publication

RNA Sequencing and Genetic Disease

Current Genetic Medicine Reports · June 21, 2016

Purpose of Review

Next-generation sequencing is a revolutionary approach for highly accurate identification of gene associations with specific human disease phenotypes. RNA sequencing (RNA-seq) holds great promise for identifying distinct gene expression “signatures” for the detection, prognosis, and chemosensitivity of human disease. However, this technique has yet to be adopted as a standard medical practice.

Recent Findings

The recent emergence of high-throughput...

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Other authors

See publication

Somatic mutation in single human neurons tracks developmental and transcriptional history

Science · October 2, 2015

Featured on cover of the October 2nd 2015 issue of Science.

Neurons live for decades in a postmitotic state, their genomes susceptible to DNA damage.
Here we survey the landscape of somatic single-nucleotide variants (SNVs) in the human
brain.We identified thousands of somatic SNVs by single-cell sequencing of 36 neurons from
the cerebral cortex of three normal individuals. Unlike germline and cancer SNVs, which are
often caused by errors in DNA replication, neuronal...

Show more

Other authors

See publication

Proteomic analysis and identification of cellular interactors of the giant ubiquitin ligase HERC2

Journal of Proteome Research · February 6, 2015

HERC2 is a large E3 ubiquitin ligase with multiple structural domains that has been implicated in an array of cellular processes. Mutations in HERC2 are linked to developmental delays and impairment caused by nervous system dysfunction, such as Angelman Syndrome and autism-spectrum disorders. However, HERC2 cellular activity and regulation remains poorly understood. We used a broad proteomic approach to survey the landscape of cellular proteins that interact with HERC2. We identified nearly...

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Other authors

See publication

Science and technology consortia in U.S. biomedical research: A paradigm shift in response to unsustainable academic growth.

Bioessays · February 6, 2015

Science and technology consortia provide a viable solution for the recent unsustainable academic growth in biomedical research.

Other authors

See publication

nEASE: a method for gene ontology subclassification of high-throughput gene expression data.

Bioinformatics · March 1, 2012

High-throughput technologies can identify genes whose expression profiles correlate with specific phenotypes; however, placing these genes into a biological context remains challenging. To help address this issue, we developed nested Expression Analysis Systematic Explorer (nEASE). nEASE complements traditional gene ontology enrichment approaches by determining statistically enriched gene ontology subterms within a list of genes based on co-annotation. Here, we overview an open-source software...

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Other authors

See publication

Therapeutic implications of GIPC1 silencing in cancer.

PLoS One · December 30, 2010

GIPC1 is a cytoplasmic scaffold protein that interacts with numerous receptor signaling complexes, and emerging evidence suggests that it plays a role in tumorigenesis. GIPC1 is highly expressed in a number of human malignancies, including breast, ovarian, gastric, and pancreatic cancers. Suppression of GIPC1 in human pancreatic cancer cells inhibits in vivo tumor growth in immunodeficient mice. To better understand GIPC1 function, we suppressed its expression in human breast and colorectal...

Show more

Other authors

See publication

Functional classification analysis of somatically mutated genes in human breast and colorectal cancers.

Genomics · June 1, 2009

A recent study published by Sjoblom and colleagues [T. Sjoblom, S. Jones, L.D. Wood, D.W. Parsons, J. Lin, T.D. Barber, D. Mandelker, R.J. Leary, J. Ptak, N. Silliman, S. Szabo, P. Buckhaults, C. Farrell, P. Meeh, S.D. Markowitz, J. Willis, D. Dawson, J.K. Willson, A.F. Gazdar, J. Hartigan, L. Wu, C. Liu, G. Parmigiani, B.H. Park, K.E. Bachman, N. Papadopoulos, B. Vogelstein, K.W. Kinzler, V.E. Velculescu, The consensus coding sequences of human breast and colorectal cancers. Science 314 (2006)...

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Other authors

See publication

Synectin/syndecan-4 regulate coronary arteriolar growth during development.

Developmental Dynamics · July 1, 2007

Syndecan-4 and its cytoplasmic binding partner, synectin, are known to play a role in FGF-2 signaling and vascular growth. To determine their roles in coronary artery/arteriolar formation and growth, we compared syndecan-4 and synectin null mice with their wild-type counterparts. Image analysis of arterioles visualized by smooth muscle alpha-actin immunostaining revealed that synectin (-/-) mice had lower arteriolar length and volume densities than wild-type mice. As shown by electron...

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Other authors

See publication

Unique cardiopulmonary exercise test responses in overweight middle-aged adults with obstructive sleep apnea.

Sleep Medicine · March 1, 2007

Obstructive sleep apnea (OSA) is characterized by repetitive nighttime obstructions of the upper airway that induce hypoxemia, hypercapnia, sympathetic activation, and arousals. This disorder induces cardiovascular autonomic imbalance and contributes to the development of hypertension. While the diagnostic and prognostic utility of exercise testing is well established in cardiology, the clinical utility of the exercise test in screening for OSA has not been carefully explored. To explore this...

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Other authors

See publication

Synectin-dependent gene expression in endothelial cells.

Physiological Genomics · November 27, 2006

Synectin (GIPC1), a receptor scaffold protein, has been isolated by our laboratory as a syndecan-4 cytoplasmic domain binding partner that regulates important aspects of cell motility (Gao Y, Li M, Chen W, Simons M. J Cell Physiol 184: 373-379, 2000; Tkachenko E, Elfenbein A, Tirziu D, Simons M. Circ Res 98: 1398-1404, 2006). Moreover, synectin plays a major role in arterial morphogenesis and in growth factor signaling in arterial endothelial cells by regulating Rac1 activity (Chittenden TW...

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Other authors

See publication

Transcriptional profiling in coronary artery disease: indications for novel markers of coronary collateralization.

Circulation · October 24, 2006

The development of collateral circulation plays an important role in protecting tissues from ischemic damage, and its stimulation has emerged as one of principal approaches to therapeutic angiogenesis. Clinical observations have documented substantial differences in the extent of collateralization among patients with coronary artery disease (CAD), with some individuals demonstrating marked abundance and others showing nearly complete absence of these vessels. Recent studies have suggested that...

Show more

Other authors

See publication

Selective regulation of arterial branching morphogenesis by synectin.

Developmental Cell · June 1, 2006

Branching morphogenesis is a key process in the formation of vascular networks. To date, little is known regarding the molecular events regulating this process. We investigated the involvement of synectin in this process. In zebrafish embryos, synectin knockdown resulted in a hypoplastic dorsal aorta and hypobranched, stunted, and thin intersomitic vessels due to impaired migration and proliferation of angioblasts and arterial endothelial cells while not affecting venous development...

Show more

Other authors

See publication

Automated migration analysis based on cell texture: method & reliability.

BMC Cell Biology · March 3, 2005

In this paper, we present and validate a way to measure automatically the extent of cell migration based on automated examination of a series of digital photographs. It was designed specifically to identify the impact of Second Hand Smoke (SHS) on endothelial cell migration but has broader applications. The analysis has two stages: (1) preprocessing of image texture, and (2) migration analysis.

Other authors

See publication

Characterization of synectin expression and promoter activity.

Gene · November 10, 2004

Synectin, a PDZ2 protein, binds to a number of plasma membrane receptors. We characterized synectin promoter and carried out a detailed expression survey. The protein is widely distributed in adult cells and tissues. Expression in the mouse embryo is apparent at day 4.5, peaks at day 12.5 and declines to its adult levels by day 18.5. The level of synectin transcription was minimally affected by exposure to cytokines, growth factors or hypoxia. In summary, synectin's early appearance, constant...

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Other authors

See publication

Patents

Methods for the identification and treatment of severe forms of covid-19

Issued November 17, 2022 · WO2022240746A1

Provided herein are method for treating or preventing severe coronavirus disease 2019 (COVID-19) in a subject, comprising administering to the subject a composition comprising a modulating agent that decreases or increases the expression or gene product activity of one or more driver genes.

See patent

Statistical AI for advanced deep learning and probabilistic programing in the biosciences

Filed October 10, 2020 · US20200327962A1

Statistical artificial intelligence for advanced deep learning and probabilistic programming in the biosciences is provided. In various embodiments, biological data of a population is read. The biological data include molecular features of the population. A plurality of features of the population is extracted from the biological data. The plurality of features is provided to a first trained classifier to determine a subset of the plurality of features distinguishing the population. A plurality...

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See patent

Retrosynthesis prediction using deep highway networks and multiscale reaction classification

Filed January 30, 2020 · WO2020023650A1

Retrosynthesis prediction using deep highway networks and multiscale reaction classification is provided. In various embodiments, a molecular fingerprint is determined for a chemical product. The molecular fingerprint is provided to a first trained classifier. A candidate reaction group is obtained from the first trained classifier. A second trained classifier is selected from a plurality of trained classifiers, the second trained classifier corresponding to the candidate reaction group. The...

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See patent

Statistical AI for advanced deep learning and probabilistic programing in the biosciences

Filed April 25, 2019 · WO2019079647A1

(EN)

Statistical artificial intelligence for advanced deep learning and probabilistic programing in the biosciences is provided. In various embodiments, biological data of a population is read. The biological data include molecular features of the population. A plurality of features of the population is extracted from the biological data. The plurality of features is provided to a first trained classifier to determine a subset of the plurality of features distinguishing the population. A...

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See patent

Methods for the identification and treatment of severe forms of covid-19

Filed November 17, 2022 · WO2022240743A1

Provided herein are method for treating or preventing severe coronavirus disease 2019 (COVID-19) in a subject, comprising administering to the subject a composition comprising a modulating agent that decreases or increases the expression or gene product activity of one or more driver genes.

See patent

Methods for Determining Collateral Artery Development in Coronary Artery Disease

Filed April 15, 2010 · US US20100092958A1

The present invention relates to a method for determining collateral artery development in a human subject with coronary artery disease based upon the levels of expression of markers associated with collateral artery development in coronary artery disease.

See patent

Honors & Awards

Plenary Keynote Address: Causal AI in Biological Systems.

Yale Club NYC

May 2024

Presented at the 2024 Vascular Permeability Conference in New York City.

Plenary Keynote Address: East London: A Global Hub for Digital Precision Medicine.

BioIT World Europe Conference

Nov 2023

Barts Health NHS Trust and Queen Mary University of London (QMUL) are embarking on one of the world's most ambitious digital medicine initiatives. Director of the NIHR Barts Biomedical Research Centre, Professor Sir Mark Caulfield, and newly appointed QMUL Honorary Professor Tom Chittenden will lay out this vision and its impact for patients and science. In one of the largest and most diverse NHS trusts, in the heart of the East London AI and medical research community, Barts and QMUL are...

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Fellow

Giga Society

Jul 2022

GIGA Society is the world’s most unique high-IQ association. The society is open to anyone who has scored 190 SD15 on a certified high-range test of general intelligence. This level of intellectual achievement statistically equates to one-in-a-billion of the general population. GIGA stands for Global Intellectual Giga Association.

https://gigaiqsociety.net/

Full Member

EsoterIQ Society

Jul 2022

ESOTERIQ Society was founded by Masaaki Yamauchi in 2001 to create his own personal collection of the highest IQ people in the world.

The name “ESOTERIQ” comes from the combination of the first six letters of the word “ESOTERIC” and the IQ component.

The number of letters before the IQ component of the society name (ESOTER, 6) is directly related to the six standard deviations above the mean required on an IQ performance for anyone to claim membership in the society.

This...

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Lifetime Member

Grand Master Society

Jul 2022

The Grand Master Society stands as the most exclusive, extremely high IQ society. The society aims to have members who achieved Grand Master level on the high range IQ tests.

The minimum requirement to enter the Grand Master Society is a performance on an acceptable high range IQ test of at least five standard deviations above the mean of the general population. This performance corresponds to the following baseline scores:

IQ 175, sd 15 (Wechsler scale)
IQ 180, sd 16...

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Member

World Genius Directory

Feb 2022

The WGD is the current Who's Who of the High-IQ World. The World Genius Directory was created by Dr Jason Betts.

https://psiq.org/home.html

Keynote Address: Exascale Causal AI/ML Computing for the Biomedical Sciences

Intel Corporation

Dec 2021

Presented at the 2021 Intel All.ai Virtual Summit.

Diplomate

The International Society for Philosophical Enquiry or ISPE

Oct 2021

The International Society for Philosophical Enquiry (ISPE) is a high-IQ society open to people who score at or above the 99.9th percentile on a standardized psychometric test of intelligence. Often referred to by the abbreviation, "ISPE," our society was originally founded as The Thousand* in 1974 by Christopher Harding of Australia. We are a non-profit organization, and we refer to our members as "Thousanders," because only one out of a thousand people will qualify for membership in ISPE...

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Keynote Address: Causal AI/ML for the Biomedical Sciences

Pistoia Alliance

Oct 2021

Presented at the 2021Pistoia Alliance Digital Transformation in R&D Virtual Conference.

2021 Cognitive Science and Artificial Intelligence Award Winner

Global Genius Directory

Aug 2021

The 2021 Global Genius Directory Award has been given to Tom Chittenden, PhD, DPhil in recognition of his contribution to cognitive science and artificial intelligence with achieving a very high IQ score.

Tom is an Omega Society Fellow and an Accredited Professional Statistician™ with the American Statistical Association. He holds faculty appointments at Boston Children's Hospital and the Harvard Medical School. His research has been published in top-tier scientific journals, including...

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2021 Artificial Intelligence Excellence Award Winner

Business Intelligence Group

Mar 2021

The Artificial Intelligence Excellence Awards recognize those organizations, products and people who bring AI to life and apply it to solve real problems. Awards are given out for excellence in one of the four major types of AI including Reactive Machines, Limited Memory , Theory of Mind, and Self-Awareness.

https://www.bintelligence.com/blog/2021/3/29/5-people-24-companies-and-42-products-awarded-for-excellence-in-artificial-intelligence

Keynote Address: Unconventional Machine Learning for the Biomedical Sciences

AI-ML Drug Discovery & Development Summit 2020

Feb 2020

Presented at the AI-ML Drug Discovery & Development Summit 2020 in San Diego, California.

Keynote Address: Unconventional Machine Learning for the Biomedical Sciences

BioData World Congress Europe 2019

Dec 2019

Presented at BioData World Congress Europe 2019 in Basel, Switzerland.

2019 Top 100 AI Leaders in Drug Discovery and Advanced Healthcare

Deep Knowledge Analytics and Forbes Magazine

Feb 2019

https://www.forbes.com/sites/yiannismouratidis/2019/02/13/the-100-leading-pioneers-of-ai-drug-development/?sh=38a9a1014598

Keynote Address: A.I. and Precision Medicine: Furthering Scientific Understanding of Complex Disease

BioData World Congress Europe 2018

Nov 2018

Presented at BioData World Congress Europe 2018 in Basel, Switzerland.

Keynote Address: Novel Ensemble Computational Intelligence Strategies for Predictive Modeling and Deep Learning in the Biosciences

Pistoia Alliance

Oct 2018

Presented at the 2018 Pistoia Alliance A.I. and Machine Learning Symposium in Boston, Massachusetts.

Vice Chancellor of Research Innovator Lecture: Ensemble Computational Intelligence Reveals Novel Molecular Signatures of Cancer Biology and Pan-Cancer Survival

University of Tennessee Health Science Center

Apr 2018

Presented at the prestigious 2018 Vice Chancellor of Research Innovator Lecture at the University of Tennessee Health Science Center in Memphis, Tennessee.

Keynote Address: Novel Feature Selection Strategies for Enhanced Predictive Modeling and Deep Learning in the Biosciences

Future of Health Technologies Institute

May 2016

Presented at the 2016 Future of Health Technology Summit at the Massachusetts Institute of Technology Media Laboratory in Cambridge, Massachusetts.

2009-2010 Outstanding Recent Alumnus Award

College of Agriculture & Life Sciences, Virginia Polytechnic Institute and State University

Mar 2010

http://www.vtmag.vt.edu/fall10/alumni-2.html

Phi Sigma Biological Sciences Honor Society

-

Nov 2000

http://phisigmasociety.org/

Test Scores

Extreme Sigma Test

Score: 31/31

Oct 2021

Raw score of 31/31
Estimated intelligence quotient of 190 sd 15 (Wechsler scale)
Estimated intelligence quotient of 196 sd 16 (Stanford-Binet scale)
Estimated intelligence quotient of 244 sd 24 (Cattell scale)
Equates to 99.9999999010 percentile or a rarity of one in 1,009,976,678

High Range IQ Test Author: YoungHoon Kim, MSc

Concept Mastery Test, Form A

Score: 178.5/190

Sep 2019

Raw score of 178.5/190
Estimated intelligence quotient of 171.55 sd 15 (Wechsler scale)
Estimated intelligence quotient of 176.32 sd 16 (Stanford-Binet scale)
Estimated intelligence quotient of 214.48 sd 24 (Cattell scale)
Equates to 99.9999078 percentile or a rarity of one in 1,084,267

Psychometrician: Ronald K. Hoeflin, PhD

Concept Mastery Test, Form T

Score: 185.5/190

Sep 2019

Raw score of 185.5/190
Estimated intelligence quotient of 165.10 sd 15 (Wechsler scale)
Estimated intelligence quotient of 169.44 sd 16 (Stanford-Binet scale)
Estimated intelligence quotient of 204.16 sd 24 (Cattell scale)
Equates to 99.9993 percentile or a rarity of one in 140,000

Psychometrician: Ronald K. Hoeflin, PhD

Organizations

Giga Society

Fellow

Jul 2022 - Present

GIGA Society is the world's most unique high-IQ association. The society is open to anyone who has scored 190 SD15 on a certified high-range test of general intelligence. This level of intellectual achievement statistically equates to one-in-a-billion of the general population. GIGA stands for Global Intellectual Giga Association. https://gigaiqsociety.net/

Grand Master Society

Lifetime Member

Jul 2022 - Present

The Grand Master Society stands as the most exclusive, extremely high IQ society. The society aims to have members who achieved Grand Master level on the high range IQ tests. The minimum requirement to enter the Grand Master Society is a performance on an acceptable high range IQ test of at least five standard deviations above the mean of the general population. This performance corresponds to the following baseline scores: IQ 175, sd 15 (Wechsler scale) IQ 180, sd 16 (Stanford-Binet...

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World Genius Directory

Member

Feb 2022 - Present

http://www.psiq.org/home.html

Omega Society

Member

Oct 2019 - Present

The Omega Society exists for the recognition and encouragement of individuals of extremely high intelligence. It was founded by noted psychometrician and philosopher Dr. Ronald K. Hoeflin, who also founded the Mega and Prometheus Societies. The society is open to anyone who, in Dr Hoeflin's judgment, has scored at the one-in-a-million level on a test of general intelligence which is accepted by the Society. http://theomegasociety.com/introduction.html

Association for the Advancement of Artificial Intelligence

Life Member

Aug 2016 - Present

http://www.aaai.org/home.html

American Statistical Association

Life Member

Apr 2016 - Present

http://www.amstat.org/

Biophysical Society

Member

Jul 2014 - Present

http://www.biophysics.org/

European Society for Mathematical and Theoretical Biology

Member

Jul 2014 - Present

http://www.esmtb.org/index.php

Society for Mathematical Biology

Member

Jul 2014 - Present

http://www.smb.org/index.shtml

Oxford and Cambridge Society of New England

Member

Sep 2012 - Present

http://www.oxcamne.org/

International Society for Philosophical Enquiry

Diplomate (Oct 2021)

Jul 2012 - Present

http://www.thethousand.com/

International Society for Computational Biology

Member

Jun 2012 - Present

https://www.iscb.org/

Harvard Alumni Association
Member
Sep 2010 - Present
http://alumni.harvard.edu/

Oxford Alumni Association
Member
May 2006 - Present
https://www.alumni.ox.ac.uk/

Virginia Tech Alumni Association
Member
Aug 2002 - Present
http://www.alumni.vt.edu/

New England Complex Systems Institute
Member
Apr 2013 - Sep 2019
http://www.necsi.edu/

Recommendations received

John Rhodes
“Tom is an intelligent, dedicated, determined scientist who accomplishes the goals that he sets for himself. With that, he is good co-worker and will do what is best for "the team".”

1 person has recommended Tom

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