

<u>IV Colóquio sobre Contabilidade Pública & Análise de Dados</u>	<u>IV Public Sector Accounting & Data Analytics Colloquium</u>
Uma iniciativa da FGV-EBAPE & da Rutgers University	A joint symposium between FGV and Rutgers University
Segunda-feira, 03 de Junho de 2019, das 8h às 18h	Monday June 3 rd , 2019, 8 AM – 6 PM
Sobre	About
A Coordenação do Mestrado Profissional em Administração Pública (MAP) da FGV-EBAPE e a Coordenação do Mestrado Acadêmico e Doutorado em Administração da FGV-EBAPE, em parceria com a Rutgers University e a UERJ, realizará no dia 3 de Junho o <i>IV Public Sector Accounting & Data Analytics Colloquium</i> .	The coordination of the Professional Master's in Public Administration from FGV-EBAPE and the coordination of the MSc & PhD in Administration from FGV-EBAPE, in partnership with Rutgers University and UERJ, will hold the <i>IV Public Sector Accounting & Data Analytics Colloquium</i> on June 3 rd .
Este é o terceiro colóquio co-realizado pela FGV e a Rutgers University. As edições anteriores do <i>Public Sector Accounting & Data Analytics Colloquium</i> ocorreram em junho de 2018, maio de 2017 e maio de 2016, também na sede da FGV, na FGV-EBAPE.	This is the third colloquium co-organized by FGV and Rutgers University. Previous editions of the <i>Public Sector Accounting & Data Analytics Colloquium</i> were in June 2018, May 2017 and May 2016, held at FGV-EBAPE.
O propósito do colóquio é analisar a crescente demanda por transparência e <i>accountability</i> sobre a gestão dos recursos públicos, o que confere aos auditores do governo a responsabilidade de fornecer garantias sobre o desempenho de programas e a posição financeira das entidades governamentais, que devem ter seus recursos gastos adequadamente.	The purpose of the colloquium is to analyze the growing demand for transparency and accountability in the management of public resources, which gives government auditors the responsibility to provide assurances about the performance of programs and the financial position of government entities that must have their resources properly allocated.
Especificamente nesta edição do colóquio, teremos três “aulas abertas” sobre técnicas de análise de dados ministradas por professores da Rutgers. Uma sobre redes neurais, a segunda	Specifically, in this edition of the colloquium, we will have three "open classes" on data analysis techniques taught by Rutgers faculty. First you will hear about neural networks, secondly

<p>sobre o uso de inteligência artificial em auditoria para detecção de fraudes, e finalmente sobre uso de <i>drones</i> para gestão de estoques. A primeira aula terá 90 minutos de duração, as duas seguintes terão 45 minutos cada, ao longo dos quais os professores apresentarão os fundamentos dessas técnicas. Espera-se que ao final dessas aulas a audiência se sinta confortável para dar seus primeiros passos no uso dessas técnicas, quer como pesquisador interessado em desenvolver pesquisas acadêmicas, quer como cidadão interessado em avaliar a qualidade de políticas públicas (<i>armchair auditor</i>), quer como profissional da contabilidade que necessita otimizar seus processos de análise de dados.</p>	<p>about the use of artificial intelligence in audit for fraud detection, and finally about drones for inventories. The first class will last 90 minutes, the other two will last 45 minutes each, during which teachers will present the fundamentals of these techniques. It is hoped that at the end of these classes the audience will feel comfortable to take their first steps in using these techniques, either as a researcher interested in developing academic studies, or as a citizen interested in evaluating the quality of public policies (armchair auditor) or as accounting professional who needs to optimize her data analysis processes.</p>
<p>Teremos uma palestra do Laboratório de Ciência de Dados Aplicados ao Controle Governamental, Controladoria Geral do Município da Cidade do Rio de Janeiro, que já aplicam tecnologias avançadas de ciência de dados para a análise do controle governamental. O Laboratório apresentará sua missão, as questões que motivam suas pesquisas, as bases de dados de que dispõem e as tecnologias que utilizam; além de potenciais aproximações com o meio acadêmico.</p>	<p>We will have a lecture from the Laboratory of Data Science Applied to Government Control, General Controllershship of the City of Rio de Janeiro (<i>Laboratório de Ciência de Dados Aplicados ao Controle Governamental, Controladoria Geral do Município da Cidade do Rio de Janeiro</i>), which already apply advanced technologies of data science for the analysis of government control. The Laboratory will present its mission, the issues that motivate its research, the databases available to it and the technologies they use; as well as potential approximations with the academic environment.</p>
<p>O evento também terá uma seção de 150 minutos dedicada à apresentação e debate de pesquisas acadêmicas em desenvolvimento. Pesquisas que utilização de <i>data analytics</i> para a análise de <i>big data</i> no contexto de contabilidade pública, controle governamental e finanças públicas, ou que propõem a utilização de <i>data</i></p>	<p>The event will also feature a 150-minute session devoted to the presentation and discussion of academic research in development. Working papers that use data analytics for the big data analysis in the context of public accounting, government control and public finance, or that propose the use of data analytics for the public good, such as the case of blockchain.</p>

<i>analytics</i> para o bem público, como o caso do <i>blockchain</i> .	
O evento a ser realizado no edifício sede da FGV no Rio Janeiro, na Praia de Botafogo, 190 – auditório Thompson Motta (12º andar), no dia 3 de Junho, das 8h às 18h.	The event to be held at the FGV headquarters building in Rio Janeiro, at Praia de Botafogo, 190 - Thompson Motta auditorium (12 th floor), on June 3 rd , from 8 am to 6 pm.
As seguintes universidades participarão como <i>hubs</i> , conectados em tempo real durante todo o evento, onde a audiência local interagirá com os palestrantes e audiência do edifício da FGV: UnB, UFPA e UFBA.	The following universities will participate as hubs, connected in real time and all time, where the local audience will interact with the speakers and audience of the FGV building: UnB, UFPA and UFBA.

Agenda:

Horário / Time	Tópicos da Apresentação / Presentation Topic	Apresentador / Presenter
8h00 – 8h15	Welcome coffee	
8h15 – 8h25	Abertura / Opening Remarks	Prof. Dr. Ricardo Lopes Cardoso & Prof. Dr. Miklos A. Vasarhelyi, Maria Helena Pettersson
8h25 – 9h00	?	Prof. Dr. Miklos A. Vasarhelyi
9h00 – 9h30	MARINHA DO BRASIL	
9h30 – 11h00	Aula aberta / Open class: Uma explicação de Redes Neurais e uma demonstração em <i>TensorFlow</i> / An Explanation of Neural Networks and a Demonstration in TensorFlow	Prof. Dr. Kevin Moffitt Prof. Dr. Maurício Codesso
11h00 – 11h15	Coffee break	
11h15 – 12h00	Open class: Audit AI for financial fraud detection	Profa. Dr. Deniz Appelbaum
12h00 – 12h45	Open class: Drone inventory case study	Profa. Dr. Deniz Appelbaum
12h45 – 14h00	Lunch	
14h00 – 14h30	Laboratório de Ciência de Dados Aplicados ao Controle Governamental, Controladoria Geral do Município da Cidade do Rio de Janeiro	Márcia Andréa S. Peres Maurício Esquerdo
14h30 – 15h00	Intelligent Process Automation in Audit	Profa. Abigail Zhang
15h00 – 15h30	Ethical Implications for the Audit of AI in the Public Sector	Profa. Dr. Deniz Appelbaum
15h30 – 15h45	Coffee break	
15h45 – 16h15	Aprendendo sobre corrupção: uma estrutura estatística para usar relatórios de auditoria em modelos inferenciais / Learning about corruption: a statistic framework for using audit reports in inferential models	Prof. Dr. Eduardo Mendes Prof. Dr. Rodrigo Targino
16h15 – 16h45	?	Prof. Dr. Maurício Codesso
16h45 – 17h30	Análise das contas dos governos locais / Complexity of and Inconsistency in Governmental Financial Data	Prof. Dr. Ricardo Lopes Cardoso, Profa. Dr. Deniz Appelbaum, Dr. Felipe Buchbinder, Claudiane Campos
17h30 – 17h50	Sessão de considerações gerais / Wrap-up session	Dr. Deniz Appelbaum, Prof. Dr. Rodrigo Targino, Prof. Dr. Miklos A.

		Vasarhelyi & Prof. Dr. Ricardo Lopes Cardoso
17h50 – 18h00	Encerramento / Closing Remarks	Prof. Dr. Miklos A. Vasarhelyi, Prof. Dr. Ricardo Lopes Cardoso

Apresentadores / Presenters:



Prof. Dr. Ricardo Lopes Cardoso

Professor of Accounting

Brazilian School of Public and Business Administration (EBAPE), FGV

Ricardo Lopes Cardoso joined the Brazilian School of Public and Business Administration, Fundação Getulio Vargas, in 2004, where he teaches Accounting to undergraduate and graduate courses, both for private sector and public sector. In 2005 he received his PhD in Accounting from the University of Sao Paulo. In the last ten years he has also served the IFRS Foundation, Education Initiative, as an Academic Fellow responsible for preparing training material in IFRS; the World Bank as an independent consultant responsible for reviewing Accounting and Auditing (A&A) practices as part of the Reports on the Observance of Standards and Codes (ROSC) initiative; the Brazilian Federal Association of Accountants (CFC) and Group of Latin-American Accounting Standard-Setters (GLASS/GLENIF) as a special advisor; and the Fiscal Council of CTEEP, an electric energy transmission company in Brazil. Ricardo's research interests are on judgment and decision making in accounting and auditing, both in public and private sectors.

Prof. Dr. Miklos A. Vasarhelyi



KPMG Distinguished Professor of Accounting Information Systems

Rutgers Business School

Dr. Miklos is KPMG Professor of Accounting Information Systems, Graduate School of Management, Rutgers University, and a technology consultant, ECommerce Solutions Group AT & T Laboratories. He has his BS degree from the State University of Guanabara (Economics) and the Catholic University of Rio de Janeiro (Electrical Engineering) an MBA from the Massachusetts Institute of Technology and his Ph.D. in Management from the University of California, Los Angeles (Management Systems Information). Current research interests of Prof. Vasarhelyi dealing with the area of monitoring, auditing / continuous control, business agents and electronic commerce. He has taught accounting topics and system programs for both graduate and executive in the U.S., Europe and South America consulted on accounting matters and information to the government and big business in the U.S., Europe and Brazil. He has received research grants from the

FASB, the Touche Ross Foundation, the Peat, Marwick and Mitchell Foundation, the American Accounting Association, Accounting Education Change Commission, the Institute of Internal Auditors, Ernst & Young, and others. Prof. Vasarhelyi is the director of the Rutgers Accounting Research Center also Laboratory Continuous Auditing and Reporting (Carlab) (<http://raw.rutgers.edu/Miklos>).



Prof. Dr. Kevin C. Moffitt

Professor of Accounting Information Systems
Rutgers Business School

Kevin Moffitt received his PhD the University of Arizona. His research areas include Automated credibility assessment, fraudulent financial reporting, knowledge discovery through text mining, motivation in online communities.



Prof. Dr. Maurício Codesso

Rutgers Business School

Mauricio Codesso has a Ph.D. in Business Administration at the University of Santa Catarina, and currently, he is doing a Post-Doc in Accounting Information Systems at Rutgers Business School. He is a professor of undergraduate and postgraduate degrees in the disciplines of Controllershship, Financial Management, Corporate Governance and Accounting Information Systems. He has ten years of experience in ERP systems development and deployment, Business Intelligence, Machine Learning and Deep Learning.



Prof. Abigail Zhang

PhD Candidate in Accounting Information Systems
Rutgers Business School

Abigail is a PhD candidate in the Accounting Information System department at Rutgers Business School. Her research addresses the impacts of emerging technologies, especially Robotic Process Automation (RPA), Artificial Intelligence (AI), and Intelligent Process Automation (IPA), on auditing. She has been working with several medium sized public accounting firms to build prototypes of implementing RPA in some of their audit procedures. In her working paper “Intelligent Process Automation in Audit”, which has been presented in the Strategic and Emerging Technologies (SET) workshop in the 2018 American

Accounting Association (AAA) annual meeting, three frameworks are constructed to guide the implementation of IPA in the future of audit. She recently authored and instructed the AICPA course module *Organizational Implications of RPA*. Currently she is also a part time lecturer at Rutgers Business School.

Profa. Dr. Deniz Appelbaum



Assistant Professor of Accounting and Finance *Montclair University, Feliciano School of Business*

Deniz Appelbaum is a PhD of Accounting Information Systems at Rutgers, the State University of New Jersey, USA. She has written and presented papers on fraud detection systems, drones and accounting, analytics in auditing, and on Big Data. Her current presentation discusses the automation of accounting and auditing, utilizing drones, robots, and bots. Dr. Appelbaum has published manuscripts in *Accounting Horizons*, *Journal of Emerging Technologies in Accounting*, *Auditing: Journal of Practice and Theory*, and in other academic and practitioner journals, based on her research regarding analytics, big data, and automation in financial auditing and fraud detection. Prior to teaching at Montclair State, her graduate research at Rutgers focused on financial fraud detection and prevention with automated analytics, data transparency of governmental financial reporting, analytical procedures in the external audit process, drones and robotics in auditing and accounting, and BlockChain and big data as audit evidence. Dr. Appelbaum continues to emphasize these streams of research with numerous projects and forthcoming publications, and with presentations to accounting organizations and at national and international conferences. Dr. Appelbaum emphasizes the use of data analytics and appropriate software tools in the classroom, to prepare accounting and auditing students for the technically advanced modern business environment. The accounting and auditing professions are currently undergoing huge disruptions due to technical innovations, and Dr. Appelbaum is devoted to assisting her students to prepare for these changes.



Maria Helena Petterson

Independent Consultant and Board Member *Public Interest Oversight Board (PIOB)*

Maria Helena is a Senior professional with over 30 years of experience in finance, accounting, internal controls and corporate governance having acted as coordinating partner serving various multinational and local listed companies in different sectors, involving large and complex audits and consulting engagements. Since 2012 she has served

as independent consultant and board member of the PIOB – the global independent oversight body that seeks to improve the quality and public interest focus of the international standards formulated by the Standard Setting Boards supported by the International Federation of Accountants (IFAC) in the areas of audit and assurance, education, and ethics. Concurrently, she also has served as vice-president of the National Association of Accountants and Finance Professional (ANEFAC). Before that she was an EY audit partner for more than 20 years. In her presentation she discusses an overview of the current regulatory ecosystem, the role of the Public Interest Oversight Board and the challenges posed by the speed of changes in technology as well as the emergence of new audit data analytics techniques.



Prof. Rodrigo S. Targino

Assistant Professor of Statistics
School of Applied Mathematics (EMAp), FGV

Rodrigo Targino joined The School of Applied Mathematics (EMAp) at Fundacao Getulio Vargas (FGV) in 2016. Previously to that, he held positions in the Risk Management teams of two large financial institutions in Brazil: Itau-Unibanco bank (2010-2011) and Credit-Suisse Hedging-Griffo asset management (2011-2012). He holds a PhD degree in Statistics from the University College London (2016) and his research is mostly devoted to statistical methodology (Bayesian and Monte Carlo methods), applied to problems in financial and actuarial risk management. Since joining FGV he has also been working in collaboration with The Brazilian Institute of Economics (IBRE-FGV) using Data Analytics tools to extract information from news articles.



Prof. Eduardo F. Mendes

Assistant Professor of Statistics & Machine Learning
School of Applied Mathematics (EMAp), FGV

Eduardo Mendes received his PhD in Statistics from Northwestern University (2012) and worked as a post-doctoral research fellow at the School of Economics at the University of New South Wales in Sydney, Australia, before joining the School of Applied Mathematics (EMAp) at FGV in 2015. His research interests lie on the intersection between statistical learning and econometrics, in both methodological and theoretical aspects. His work has been applied in financial econometrics and, more recently, in macroeconomic modeling. In a recent line of work he is interested in using publicly available data to understand social behavior and the usage of it in public policy evaluation. He is also associated with the Brazilian Institute of Economics (IBRE-FGV) in the developing indices using scrapped data from the.

Prof. Felipe Buchbinder

Professor of Statistics

School of Applied Mathematics (EMAp), FGV

Analyst

Brazilian Social and Economic Development Bank, BNDES

Felipe Buchbinder received his PhD in **Statistics** from Northwestern University (2012) and worked as a post-doctoral research fellow at the School of Economics at the University of New South Wales in Sydney, Australia, before joining the School of Applied Mathematics (EMAp) at FGV in 2015. His research interests lie on the intersection between statistical learning and econometrics, in both methodological and theoretical aspects. His work has been applied in financial econometrics and, more recently, in macroeconomic modeling. In a recent line of work he is interested in using publicly available data to understand social behavior and the usage of it in public policy evaluation. He is also associated with the Brazilian Institute of Economics (IBRE-FGV) in the developing indices using scrapped data from the.

Claudiane Campos

Analyst

Brazilian Social and Economic Development Bank, BNDES

Claudiane Campos received concluded her Master in Public Administration at FGV-EBAPE (2019) and works as a post-doctoral research fellow at the School of Economics at the University of New South Wales in Sydney, Australia, before joining the School of Applied Mathematics (EMAp) at FGV in 2015. His research interests lie on the intersection between statistical learning and econometrics, in both methodological and theoretical aspects. His work has been applied in financial econometrics and, more recently, in macroeconomic modeling. In a recent line of work he is interested in using publicly available data to understand social behavior and the usage of it in public policy evaluation. He is also associated with the Brazilian Institute of Economics (IBRE-FGV) in the developing indices using scrapped data from the.