2023 PROGRAM BOOK

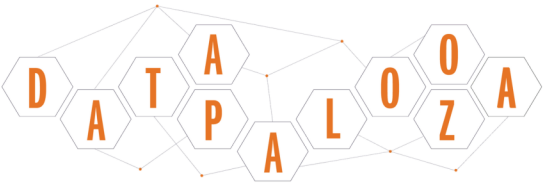
November 10, 2023

University of Virginia
Newcomb Hall

UVA DATA SCIENCE

“We are being reactionary to things that have already happened and are behind the curve. Wouldn’t it be better to get out in front of the curve? If we brainstorm what we think higher education will be like in five to 10 years, then we could actually make decisions today to move toward that future.”

– Phil Bourne, Stephenson Dean
University of Virginia, School of Data Science



PROGRAM

Friday, November 10, 2023
Newcomb Hall, University of Virginia

8:30 a.m.-4:00 p.m.

REGISTRATION, CHECK-IN | 3rd Floor Lobby

8:30-9:00 a.m.

BREAKFAST | Main Lounge

9:00-9:15 a.m.

WELCOME | Ballroom

Phil Bourne, Dean, School of Data Science, UVA

9:15-9:45 a.m.

LAUNCH OF THE FUTURES INITIATIVE AT UVA | Ballroom

Over the next year, a group of thought leaders from across the University, known as the Futures Initiative Group, will examine the current drivers of change in academia, such as artificial intelligence and large language models, while also looking ahead to the eventual impact of sensor technology, virtual classrooms, the Internet of Things, and myriad other technological changes. Discussions will include town halls and podcasts, with guests expected to include futurists, business leaders,

scientists, and college presidents. The goal of the initiative is to develop a series of recommendations, which will be delivered to University leadership, on how to chart a path forward so that UVA can be proactive, rather than reactive, to external events.

- Phil Bourne, Dean, School of Data Science, UVA
- Ian Baucom, Executive Vice President and Provost, UVA

9:45-10:30 a.m.

FUTURES INITIATIVE FEATURED SPEAKER | Ballroom

Scott Stephenson, Founder of SGS Capital and former Chairman, President and CEO of Verisk Analytics

10:30-10:45 a.m.

BREAK

10:30-10:45 a.m.

BREAKOUT SESSIONS

- **Breakout 1: The Future of Data Science Education Panel**
  Ballroom

  Data science instruction may evolve with advancements in technology and pedagogy, but the core learning outcomes will endure. Like our predecessors, our mission is the development of problem solvers who can think critically, collaborate effectively, communicate clearly, and understand the potential impacts of new technologies on our communities. Undoubtedly, the future will introduce new hardware, software, and algorithms that will reshape the field of data science and the landscape of data science education both residentially and online. This panel will delve into how the faculty at UVA's School of Data Science is actively working to craft a liberal arts curriculum suitable for the digital age, one that not only adapts to but embraces changes in technology and practice. The panel will discuss the future of data

science education, including in K-12, the school's guiding philosophy for its undergraduate and graduate programs (minor, B.S., online and residential M.S., Ph.D.), and the merits as well as challenges that arise when constructing a new educational curriculum for a new discipline.

- Prince Afriyie, Associate Professor Data Science, UVA
- Jon Kropko, Associate Professor Data Science, UVA
- Tom Stewart, Associate Professor Data Science, UVA
- Brian Wright, Associate Professor Data Science, UVA
- Jeffrey Blume, Associate Dean for Academic and Faculty Affairs in Data Science, UVA (moderator)

Breakout 2: The Future of Data Science In Environment Talks

South Meeting Room

In this session, experts will discuss how data science is shaping environmental efforts. They will cover how new tech, like AI, aids in environmental studies and improving human interaction with natural systems. The talks will highlight the importance of predictive analytics in understanding environmental trends and decision-making. We will have discussions on data ethics, management issues, and the need for global cooperation. Attendees will also learn about the significance of data literacy and training future environmental data experts. This session is ideal for anyone interested in using data to benefit the environment.

- **Physics-Guided Graph Neural Networks for Modeling River Networks**
  Sheng Li, Associate Professor of Data Science, UVA

- **Predicting Food Insecurity Across Africa from Environmental, Demographic, Economic, and Political Data**
  Jade Preston, Doctoral Candidate in Data Science, UVA

- **AI Understanding of Environments for Large-Scale Urban Planning and Engineering with Nature**
  Bill Basener, Professor of Data Science, UVA
  Michael Luegering, Assistant Professor of Landscape Architecture, UVA

Breakout 3: The Technical Evolution of LLM Talks

Commonwealth Room

Large language models, or LLMs, have emerged as powerful tools for many scientific domains. Tools such as ChatGPT have demonstrated impressive capabilities in generating coherent and contextually relevant responses to textual prompts. LLMs will have the potential for scientific hypothesis generation, as LLMs have the ability to analyze vast amounts of scientific literature, text and image data, and other sources to identify patterns and potential relationships between different scientific concepts. This can help scientists in different domains with new insights, connections, and predictions that can help guide further research and experimentation. However, current LLMs also have several critical problems, such as their tendency to hallucinate, their lack of interpretability, and their limitations in processing multimodal data. The talks in this session focus on a variety of issues pertaining to this emerging new technology.

- **Model Editing: Keeping LLMs up to date without retraining**
  Tom Hartvigsen, Assistant Professor of Data Science, UVA

- **Collaborative Large Language Model for Recommender Systems**
  Jundong Li, Assistant Professor of Electrical and Computer Engineering, UVA

- **Large Language Models: Two Sides of One Story**
  Yangfeng Ji, Assistant Professor of Computer Science, UVA

- Aidong Zhang, Professor of Computer Science, Biomedical Engineering, and Data Science, UVA (moderator)

11:45 a.m.-1:15 p.m.

LUNCH & ROUNDTABLE DISCUSSIONS | Ballroom

Lunch events are on a first-come, first-served basis.

12:00-12:45 p.m.

ADMISSIONS OPEN HOUSE

B.S. in Data Science | South Meeting Room
M.S. in Data Science | Commonwealth Room
Ph.D. in Data Science | Room 389

12:45-1:15 p.m.

DROP-IN ADVISING

B.S. in Data Science | South Meeting Room
M.S. in Data Science | Commonwealth Room
Ph.D. in Data Science | Room 389

1:15-2:15 p.m.

BREAKOUT SESSIONS

- **Breakout 1: The Future of AI on Society Panel** | Ballroom

  Artificial intelligence has the potential to change our societies, economies, and political systems in both intentional and unintended ways. While it is difficult to understand the full extent of what the long-term impacts may be, we have enough shared knowledge and expertise to predict the likely shapes that these changes may take—both for better and for worse. More importantly, we should ask ourselves what kind of future we want AI to help us create: what we want from the future of AI should ultimately determine the future of AI. This panel will bring together experts to discuss the intersection of AI and society and offer suggestions for how AI might work within a just, inclusive, sustainable, and fair digital future.

  - Farhana Faruqe, Assistant Professor of Data Science, UVA
  - Sarah Lebovitz, Assistant Professor of Commerce, UVA
  - Larry Medsker, Research Professor, George Washington University
  - Mar Hicks, Associate Professor of Data Science, UVA (moderator)

Breakout 2: The Future of Data Science In Health Talks

South Meeting Room

This session explores the dynamic landscape of data science in health care. Topics encompass the future of personalized medicine through data-driven approaches to revolutionize health care delivery. Attendees will gain insights into how data science is reshaping health care, leading to more precise and personalized medical solutions.

- **Learning From Data in Complex and Heterogeneous Biological Systems**
  Heman Shakeri, Assistant Professor of Data Science, UVA

- **Bridging the Gap in Pediatric Heart Transplants with Data Science**
  Michael D. Porter, Associate Professor of Systems Engineering and Data Science, UVA

- **Towards Sensing and Personalized Intervention for Mental Health**
  Laura Barnes, Professor of Systems and Information Engineering, UVA

Breakout 3: The Future of Data Science In Business Panel

Commonwealth Room

In business, data science innovations meet vexing problems that have valuable solutions. Throw in cutting-edge technology, abundant and accessible data, and limitless resources, and we have fertile conditions for the genesis of game-changing and, potentially, life-changing advances such as we have witnessed recently with the emergence of generative AI. But the most active ingredient in this mix – people – is one of the hardest to prepare. Equipping future employees and leaders to cope with and capitalize on the dizzying progress is a challenge that we must tackle now if we are to sustain or accelerate the impact of data science in the future of business. This session will explore trends in data science innovation that will be most impactful in business over the next decade and, as a result, what businesses need from the next generation of data science talent and the institutions, like UVA, that train them.

- Peter Alonzi, Assistant Professor of Data Science, UVA
- Hamit Hamutcu, Senior Advisor, Institute for Experiential AI at Northeastern University
- Heidi Lanford, former Chief Data Officer, Fitch Group

- Ian O'Keefe, HR Venture Advisor, SemperVirens Venture Capital
- Terence Johnson, Assistant Professor of Data Science, UVA (moderator)
- Marc Ruggiano, Inaugural Director, UVA Darden-School of Data Science Collaboratory for Applied Data Science (moderator)

2:15-2:30 p.m.

BREAK

2:30-3:30 p.m.

GENERATIVE AI IN TEACHING AND LEARNING | Ballroom

The Generative AI in Teaching and Learning task force was formed in March 2023 to examine the implications of this technology for teaching and learning at UVA. The task force comprised six faculty members with expertise in artificial intelligence, pedagogy, and the intersection of those fields; it also included the chair of the Honor Committee. Between March and May of 2023, the task force engaged with approximately 300 faculty across six town halls and gathered survey responses from 504 students and 181 faculty. The task force also consulted external resources to learn more about the risks posed by this technology and its potential benefits, and examined how our peer institutions are responding to the rapid emergence and widespread availability of generative AI tools. This session features members of the task force, with the discussion moderated by its executive sponsor. The panel will engage in dialogue about the report, the ongoing conversation related to generative AI and its impact on teaching and learning since the report's release, and moving into the future.

- Briana Morrison, Associate Professor of Computer Science, UVA
- Reza Mousavi, Assistant Professor of Commerce, UVA
- Andy Pennock, Associate Professor of Public Policy, UVA
- Brie Gertler, Vice Provost for Academic Affairs and Professor of Philosophy, UVA (moderator)

3:30-4:00 p.m.

REFLECTION AND CLOSING REMARKS | Ballroom

Phil Bourne, Dean, School of Data Science, UVA (moderator)

4:00-5:00 p.m.

RECEPTION | South Meeting Room

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DATAPALOOZA SPEAKERS

Prince Afriyie

Associate Professor of Data Science, Program Director MSDS Residential, University of Virginia

Afriyie is an associate professor of data science at the University of Virginia where he also serves as program director of the M.S. in data science residential program. Afriyie's educational background is in mathematics and statistics. He currently serves on the Statistics Review Committee for the Centers for Disease Control and Prevention journal, Preventing Chronic Diseases, where he helps to advance understanding and dissemination of statistical methods and testing in the public health field. Prior to joining the School of Data Science, he was an assistant professor of statistics at UVA where he taught courses in introduction to data science with R, statistical analysis with Python, and mathematical statistics. Afriyie's research includes multiple comparisons, survival analysis, as well as statistics and data science education. His research in multiple comparisons is focused on developing new and powerful methodologies when testing multiple hypotheses simultaneously.

Peter Alonzi

Assistant Professor of Data Science, University of Virginia

Alonzi has served as an assistant professor of data science at the University of Virginia since 2022, previously serving as lead of research computing. Prior to joining UVA, Alonzi was a postdoctoral research associate at the Center for Experimental Nuclear Physics and Astrophysics at the University of Washington. Alonzi's areas of research include

particle physics and the intersection of mental health and the criminal justice system. Alonzi has worked at several laboratories, including the Paul Scherrer Institute, the largest center for natural and engineering sciences within Switzerland; Fermilab, a lab outside of Chicago, specializing in high-energy particle physics; Oak Ridge National Laboratory, a multiprogram science and technology national laboratory sponsored by the U.S. Department of Energy; Jefferson Lab, a U.S. Department of Energy Office of Science national laboratory; and Triumf, Canada's national particle accelerator center. Alonzi holds a Ph.D. in physics from the University of Virginia and a bachelor's degree in physics from the College of William and Mary.

Laura Barnes

Professor of Systems and Information Engineering, University of Virginia

Barnes is a professor in the Department of Systems and Information Engineering. She is the associate director of Link Lab and directs the Sensing Systems for Health Lab, which focuses on designing impactful, technology-enabled solutions for improving health and well-being. She received her Ph.D. degree in computer science from the University of South Florida. Barnes' work has been funded by the National Institutes of Health, National Institute of Aerospace, U.S. Army, and private foundations. Her research interests include autonomy and controls/control systems, wireless health, human machine interface, biomedical data sciences, and machine learning.

Bill Basener

Professor of Data Science, University of Virginia

Basener is a professor at the School of Data Science with a joint appointment in the Department of Systems and

Information Engineering. He has authored research publications in machine learning, signal processing, image processing, dynamical systems, game theory, ecological economics, evolutionary genetics, and other applied mathematical fields, as well as a textbook on applied topology and multiple patents. The methods and software he developed for processing images in hyperspectral imaging have become the gold standard in the field, used for processing millions of images by dozens of organizations. The Basener-Ross model he developed for modeling ecological collapse has been used for studying ancient civilizations. He invented the topological anomaly detection, gradient flow clustering, hierarchical material identification, and object-based identification algorithms in image processing. This technology has been used in disaster relief efforts across the world. Prior to joining the School of Data Science, Basener was an emeritus professor at the Rochester Institute of Technology of Mathematical Sciences. He is also the founder and president of two data analytics software companies.

Ian Baucom

Executive Vice President and Provost, University of Virginia

Baucom is the executive vice president and provost of the University of Virginia. As the chief academic officer, he oversees the University's teaching and research activities and directs the academic administration of the schools, the library, art museums, public service activities, numerous University centers, and foreign study programs. Before becoming provost, Baucom served for eight years as the Buckner W. Clay Dean of the College and Graduate School of Arts & Sciences at the University. Baucom came to UVA after serving 17 years in Duke University's Department of English as a professor and as the director of the John Hope Franklin Humanities Institute. Under his leadership, Arts & Sciences

launched its new College Curriculum to better prepare undergraduate students for 21st-century lives through a reimagined first-year student experience. He advanced the Arts & Sciences research mission and strengthened graduate programs; under his guidance, significant investments have been made in the Graduate School to help draw the most talented graduate students and researchers to UVA.

Jeffrey Blume

Associate Dean for Academic and Faculty Affairs in Data Science, University of Virginia

Blume is a data scientist, administrator, and biostatistician, with vast experience building and leading academic programs. Most recently, Blume served as director of graduate education at Vanderbilt's Data Science Institute and vice chair of education in the Department of Biostatistics and was a tenured professor of Biostatistics, with secondary appointments in biomedical informatics and biochemistry at Vanderbilt. His areas of research and collaboration include radiology, cancer diagnosis and prediction, nephrology, translational biomedicine, fMRI, and women's health. His published research is on a wide variety of topics, including evidential philosophy of statistical inference, likelihood methods, second-generation p-values, prediction modeling, mediation modeling, ROC curves, sequential testing, trial design, empirical Bayes methods for biomedical data, false discovery rates, model selection, and neuroimaging. Blume holds a Ph.D. in biostatistics from Johns Hopkins University and a B.A. in statistics from the State University of New York at Buffalo.

Phil Bourne

Dean, School of Data Science, University of Virginia

Bourne is the founding dean of the School of Data Science, the newest and 12th school to be formed in the University's 200-year history. He is a world-renowned biomedical and data science researcher who has published over 350 papers and five books, launched four companies, received numerous awards, and been elected as a fellow to multiple scientific societies. He was the first associate vice chancellor for innovation and industrial alliances at the University of California San Diego and the first associate director for data science at the National Institutes of Health. As dean of the School of Data Science, Bourne is leading an effort to create a new kind of school — a school "without walls," defined by interdisciplinary collaboration and open scholarship. The School is guided by common goals: to further discovery; share knowledge; and make a positive impact on society through collaborative, open, and responsible data science research, and education. Founded in 2019, the School of Data Science is positioned to play an integral leadership role in the global digital future.

Farhana Faruqe

Assistant Professor of Data Science, University of Virginia

Farhana Faruqe is a data scientist, researcher, and entrepreneur; her research focuses on trustworthy AI, human-centered design, and AI acceptance. She is active in the Trustworthy AI community. Farhana is a founding editorial board member for the AI and Ethics Journal (Springer), actively shaping ethical discourse within the AI domain. Recognizing the need for equity within the tech realm, she has founded AI4Equity, a non-profit initiative that empowers young women to elevate their AI knowledge and skills. Before joining the University of Virginia, Farhana had a cumulative

professional journey spanning over 12 years across diverse industries and academia. She holds an interdisciplinary Ph.D. in human-technology collaboration concentration, an M.S. in data science from George Washington University, and a B.S. in computer science and engineering from BRAC University.

Brie Gertler

Vice Provost for Academic Affairs and Professor of Philosophy, University of Virginia

Gertler is vice provost for academic affairs and Commonwealth Professor of Philosophy. The vice provost for academic affairs serves as a second-in-command for the provost and provides leadership and oversight of the core academic functions of the University. Specific responsibilities include academic program review; oversight of academic enhancement programs for undergraduate, graduate, and professional students; University-wide advising and support; and all aspects of state and federal academic compliance, including accreditation by the Southern Association of College and Schools. In this broadly collaborative role, she works with executive and school leadership, the Faculty Senate, and Student Affairs in advancing institutional objectives, including those identified in the University's strategic plan. Gertler joined the provost's office in July 2021. Her past appointments include acting dean of the University's College and Graduate School of Arts & Sciences, interim associate dean for the College, and chair of the Philosophy Department. Before coming to the University of Virginia in 2004, she was an associate professor at the University of Wisconsin–Madison. Prior to that she was an assistant professor at the College of William & Mary.

Hamit Hamutcu

Senior Advisor, Institute for Experiential AI at Northeastern University

Hamutcu co-founded Elements, a Boston-based data skills assessment platform. Since 2021, he has also served as a senior advisor at Northeastern University's Institute for Experiential AI. Additionally, Hamutcu co-founded the Initiative for Analytics and Data Science Standards, which set out to create industry standards for data science professionals through a collaborative process with various stakeholders. Earlier in his career he served as a managing partner with the Peppers & Rogers Group, where he led the development of analytics service offerings, and spent four years at FedEx, including as internet strategy manager from 1998 to 2000. Hamutcu received an MBA from the University of Florida and a bachelor's degree in electoral and electronics engineering from Boğaziçi University.

Tom Hartvigsen

Assistant Professor of Data Science, University of Virginia

Hartvigsen is an assistant professor of data science at the University of Virginia. He works to make machine learning trustworthy, robust, and socially responsible enough for deployment in high-stakes, dynamic settings. His research has been published at many major peer-reviewed venues in machine learning, natural language processing, and data mining. He is active in the machine learning community, serving as the general chair for the Machine Learning for Health Symposium in 2023, helping organize the 2023 Conference on Health, Informatics, and Learning, and co-chairing workshops on time series and generative AI at NeurIPS'22 and ICML'23. Prior to joining UVA, Hartvigsen was a postdoctoral associate at MIT's Computer Science and

Artificial Intelligence Laboratory. He holds a Ph.D. and M.S. in data science from Worcester Polytechnic Institute and a B.A. in applied math from SUNY Geneseo.

Mar Hicks

Associate Professor of Data Science, University of Virginia

Hicks does research on the history of computing, labor, technology, and queer science and technology studies. Their work studies how collective understandings of progress are defined by competing discourses of social value and economic productivity, and how technologies often hide regressive ideals while espousing "revolutionary" or "disruptive" goals. Their research investigates everything from how power and AI intersect, to the long history of transphobic algorithmic bias, to the connections between gender and technological change. Hicks' current work focuses on how gender and sexuality bring hidden technological dynamics to light, and how the experiences of women and LGBTQIA people change the core narratives of the history of computing in unexpected ways. Hicks' multiple award-winning first book, "Programmed Inequality," looks at how the British lost their early lead in computing by discarding women computer workers, and what this cautionary tale can tell us about current issues in high tech. Before joining UVA, Hicks was associate professor of history of technology at Illinois Institute of Technology in Chicago. Hicks holds a Ph.D. and M.A. from Duke University in history, and a B.A. in history from Harvard.

Yangfeng Ji

Assistant Professor of Computer Science, University of Virginia

Ji joined the Department of Computer Science at the University of Virginia in 2018. He leads the Information and Language Processing lab. He received his Ph.D. from the Georgia Institute of Technology in 2016. From 2016 to 2018, he was a postdoctoral researcher at the University of Washington's Paul G. Allen School of Computer Science & Engineering. His research interests include natural language processing and machine learning. Among his accolades, he received the Amazon Research Award in 2022, the UVA Engineering Innovation Award in 2019, and the NAACL Outstanding Paper Award in 2018.

Terence Johnson

Assistant Professor of Data Science, University of Virginia

Johnson is an economist specializing in market design and development economics, using machine learning and other tools to design or improve the performance of markets. He joined the School of Data Science as an assistant professor in 2022. Johnson studies how the structure of markets shapes inefficiencies that hamper economic performance, particularly in developing countries. He uses tools from game theory, mechanism design, and machine learning to measure the impact of market failures, and then designs and tests new solutions. His projects have ranged from reducing monopoly power in the market for sanitation through auctions in Senegal to empowering female entrepreneurs through mentorship and grants in Kenya to measuring the cost of corruption in public procurement in Tanzania. Johnson's projects have been funded by the Bill and Melinda Gates Foundation and the Jameel Abdul Latif Poverty Action Lab.

Jon Kropko

Associate Professor of Data Science, Program Director MSDS Online, University of Virginia

Kropko's research interests include civic technology, remote environmental sensing, survival and time series analysis, and missing data imputation. With a background in math and political science, throughout his career Kropko has sought to apply his quantitative skills to make an impact in the real world. At the School of Data Science, Kropko teaches courses on the practice and application of data science and advises students in their capstone projects. Kropko also leads Code for Charlottesville, the local chapter of Code for America. Volunteers come together every other week to participate in civic hack nights to collaborate, code, and work on projects with a variety of local organizations and nonprofits, including the Legal Aid Justice Center, Charlottesville Fire Department, Housing Navigation, the Charlottesville City Street Light Network, and more. Prior to joining the School of Data Science in 2019, Kropko taught as an assistant professor in the Department of Politics at UVA for six years.

Heidi Lanford

Former Chief Data Officer, Fitch Group

Lanford most recently served as the chief data officer at Fitch Group, one of the big three credit ratings agencies. In this role, she was responsible for Fitch's data across all divisions and products. She also led their digital transformation to harness data in order to provide next-generation tools for clients. She joined Fitch from Red Hat (IBM), where she was vice president of enterprise data and analytics, leading strategy and execution across analytics, business intelligence, data science, AI/ML, data literacy education,

data architecture, and governance. She previously held executive-level positions with Avaya and WPP. She was an advisor for HearstLab, which provides investment and services to early-stage, women-led technology startups. She serves on the advisory board for the University of Virginia's School of Data Science, the editorial board for CDO Magazine, and is a founding board member for Tableau's Data Leadership Collaborative, which connects like-minded leaders who are building data-driven organizations.

Sarah Lebovitz

Assistant Professor of Commerce, University of Virginia

Lebovitz has expertise in information systems and technological transformation. Her research focuses on how new technologies impact organizational processes and professionals' work practices. She uses field research and in-depth qualitative methods to study how these changes are occurring in practice today and to understand their impacts. Lebovitz joined the University of Virginia's McIntire School of Commerce in 2020 and teaches the Integrated Core Systems and Strategy course and Data Visualization course at the undergraduate level. Lebovitz's work has appeared in high-quality outlets, including Academy of Management Journal; Organization Science; Management Information Systems Quarterly; Information Systems Journal; and Sloan Management Review, as well as at national conferences and university research workshops. Before earning her Ph.D., Lebovitz worked as a forensics technology consultant at PricewaterhouseCoopers and as a process analyst at The J. M. Smucker Company. She also conducted innovation projects at IBM Research.

Jundong Li

Assistant Professor of Electrical and Computer Engineering, University of Virginia

Jundong Li is an Assistant Professor at the University of Virginia with appointments in Department of Electrical and Computer Engineering, Department of Computer Science, and School of Data Science. Prior to joining UVA, he received his Ph.D. degree in computer science at Arizona State University in 2019, M.Sc. degree in computer science at University of Alberta in 2014, and B.Eng. degree in software engineering at Zhejiang University in 2012. His research interests are generally in data mining and machine learning, with a particular focus on graph mining/graph machine learning, causal inference, and trustworthy AI, and more recently on large language models. As a result of his research work, he has published over 140 papers in high-impact venues (including KDD, NeruIPS, IJCAI, AAAI, WWW, WSDM, SIGIR, EMNLP, CIKM, ICDM, SDM, ECML-PKDD, CSUR, TPAMI, TKDE, TKDD, TIST, etc), with over 9,600 citation count. He has won several prestigious awards, including SIGKDD Best Research Paper Award (2022), NSF CAREER Award (2022), PAKDD Early Career Research Award (2023), JP Morgan Chase Faculty Research Award (2021 & 2022), Cisco Faculty Research Award (2021), and being selected for the AAAI New Faculty Highlights roster (2021). His group's research is generously supported by NSF (CAREER, III, SaTC, SAI), DOE, Commonwealth Cyber Initiative, Jefferson Lab, JP Morgan, and Cisco.

Sheng Li

Associate Professor of Data Science, University of Virginia

Li is an artificial intelligence researcher, and his long-term goal is to develop intelligent systems in open and dynamic

environments. Li joined the University of Virginia's School of Data Science in 2022. Prior to coming to UVA, Li was an assistant professor of computer science at the University of Georgia from 2018 to 2022 and a data scientist in Adobe Research from 2017 to 2018. He directs the Reasoning and Knowledge Discovery Laboratory. Li's research interests include trustworthy representation learning, visual intelligence, user modeling, natural language understanding, bioinformatics, and biomedical informatics. Li has extensive publications in major peer-reviewed journals and conferences. He has served as associate editor of seven journals, including IEEE Transactions on Neural Networks and Learning Systems, IEEE Transactions on Circuits and Systems for Video Technology, and IEEE Computational Intelligence Magazine, and also served as Area Chair for NeurIPS and ICLR. Li holds a Ph.D. in computer engineering from Northeastern University, a master's degree in information security, and a bachelor's degree in computer science from Nanjing University of Posts and Telecommunications.

Michael Luegering

Assistant Professor of Landscape Architecture, University of Virginia

Luegering is principal at LVA Architects. He is a licensed landscape architect in the state of New York working on a variety of design projects and research work. He received a bachelor's degree in urban planning from the University of Cincinnati. He earned a master's degree in landscape architecture with distinction from Harvard's Graduate School of Design, where he was awarded the Thesis Prize in Landscape Architecture for his thesis Vernacular Pasture Lands | The Rural Design Almanac. Michael's design perspective is framed by his study of landscape architecture, urban design, and urban planning, as well as his extensive

research in the vernacular of the American pasture and his Kentucky upbringing. He recently taught at the University of Pennsylvania in the area of landscape architecture media and visualization, and has contributed to Penn Praxis work on Resilient by Design. His past work at Penn includes working on the 2020 ASLA award-winning coastal resiliency mapping project, "Fantasy Island: The Galapagos Archipelago."

Larry Medsker

Research Professor, George Washington University

Medsker is a research professor of physics at George Washington University. He has previously served as the dean of the School of Science at Siena College as well as an associate dean at American University. His areas of expertise include physics education research, experimental nuclear physics, as well as AI and neural computing. Medsker holds a Ph.D. in physics from Indiana University.

Briana Morrison

Associate Professor of Computer Science, University of Virginia

Morrison, an associate professor of computer science, came to the University of Virginia in 2021 after serving as an assistant professor at the University of Nebraska Omaha from 2016-2021. Her goal is to make learning programming more accessible. Morrison's research interests include computer science education, broadening participation in computing, and increasing K-12 access to qualified computing teachers. She received a Ph.D. in human centered computing from the Georgia Institute of Technology, a master's degree in computer science from Southern Polytechnic State University, and a bachelor's degree in computer engineering from Tulane University.

Reza Mousavi

Assistant Professor of Commerce, University of Virginia

Mousavi has expertise in artificial intelligence and business analytics. His research topics are related to the societal impacts and economics of social media, AI and business analytics, user-generated content, and health care information systems. He uses machine learning, deep learning, and natural language processing, along with econometrics, to identify quasi-experimental settings and study the underlying relationships among the constructs of interest. Mousavi's work has appeared in Information Systems Research, Journal of Management Information Systems, and Journal of the Association for Information Systems. His work has been presented at international and national conferences such as CIST, WITS, WISE, ICIS, HICSS, and AMCIS. Mousavi has taught advanced AI and business analytics, research methods, computer programming, and project management at the undergraduate, graduate, and doctorate levels. Mousavi has worked with leading consulting firms on a variety of data science projects. He was also lead data scientist at State Farm Insurance Co. before joining academia.

Ian O'Keefe

HR Venture Advisor, SemperVIrens Venture Capital

O'Keefe serves as an HR venture advisor with SemperVIrens Venture Capital, a capital fund that manages more than $150 million, investing in technology related to health care, work, and financial wellness. Previously, he spent more than three years at Amazon, leading the global talent analytics and science team. He also created and led the workforce analytics team at JPMorgan Chase & Co. from 2016 to 2019, which aimed to use data to improve decision-making that affected business outcomes. Before his tenure at

JPMorgan, he worked at Google from 2015 to 2016, leading the people analytics strategy, project portfolio, and solutions deployment for Google's commercial businesses. O'Keefe has a master's degree in predictive analytics from Northwestern University and a bachelor's degree in psychology from the University of Virginia.

Andy Pennock

Associate Professor of Public Policy, University of Virginia

Pennock is an associate professor of public policy at the Frank Batten School of Leadership and Public Policy, teaching courses in leadership, policy analysis, political institutions, and Virginia politics and policy. During his time at Batten, Pennock has engaged and built relationships with state policymakers in Richmond, increasing Batten's influence on policy development and implementation in Virginia and providing students with experiential learning and career opportunities. In 2018, he launched one of Batten's first policy clinics, leading to 10 students staffing the transition teams for incoming Governor Ralph Northam. Pennock's academic research examines public policy in the global economy as well as the scholarship of teaching and learning. His 2019 book with CQ Press won a Textbook Excellence Award from the Textbook and Academic Authors Association and is used in professional schools across the nation.

Michael D. Porter

Associate Professor of Systems Engineering and Data Science, University of Virginia

Porter's research focuses on event prediction, pattern and anomaly detection, and data linkage. He has developed self-exciting point process models for processes where the

occurrence of certain events can trigger a cascade of subsequent events. These models have been applied to crime, terrorism, social media, and crash data and led to a winning performance in NIJ's Real-time Crime Forecasting Challenge. Porter has also developed methodology and software for crime linkage, a type of data linkage problem where the goal is to group together unsolved crimes that were committed by the same offender(s) using the behavioral patterns obtained from crime data. Prior to joining UVA in 2018, Porter was an associate professor of applied statistics at the University of Alabama. He also has industry experience as principal research scientist at DigitalGlobe/GeoEye/ Spadac and project engineer at Sanford/Newell Brands.

Jade Preston

Doctoral Candidate in Data Science, University of Virginia

Preston is a doctoral candidate in data science at the University of Virginia, sponsored by the U.S. Air Force where she is an active-duty operations research analyst. She chose to pursue data science because it is a natural touch point between the analytic and cyber career fields by applying both mathematical and computer science concepts. She has worked with her faculty advisor, Bill Basener, a professor of data science at UVA, on a project that employs remote sensing and hyperspectral image classification to examine food security, using NASA satellite imagery.

Heman Shakeri

Assistant Professor of Data Science, University of Virginia

Shakeri is an assistant professor at the School of Data Science. He is also an assistant professor by courtesy in the Department of Biomedical Engineering. His research interests include algorithm development in machine learning and

network science, computational statistics, and data-driven identification and control of high-dimensional dynamical systems. Prior to joining UVA in 2019, Shakeri worked as a postdoctoral associate at the Institute of Computational Comparative Medicine at Kansas State University. There, he conducted research on the statistical analysis of the structure and function of complex interconnected networks in natural and technological contexts, analyzed multi-drug resistance networks and their evolutions, and developed methodologies in statistical learning, data analysis, and sampling. Shakeri holds a Ph.D. in electrical and computer engineering from Kansas State University.

Scott Stephenson

Founder of SGS Capital and former Chairman, President and CEO of Verisk Analytics

Stephenson is the founder of SGS Capital and former chairman, president and CEO of Verisk Analytics. He serves on several for-profit and not-for-profit boards, including PSEG (NYSE), Definitive Healthcare (NASDAQ), The Bowery Mission (chair), Yale Center for Faith and Culture, the Human Flourishing Program at Harvard, and the University of Virginia's School of Data Science. He also serves as an advisory partner with the global private equity firm Advent International. Stephenson is a signatory of the Business Roundtable's statement on The Purpose of a Corporation. During his tenure as CEO of Verisk Analytics, Forbes recognized Stephenson as one of America's Most Innovative Leaders and as one of the Top 25 Most Innovative Leaders Worldwide. Along with his wife, Beth, he established The Stephenson Dean of Data Science at UVA. He has an MBA from Harvard Business School and a bachelor's degree in mechanical engineering from UVA.

Tom Stewart

Associate Professor of Data Science, Program Director

Ph.D. in Data Science, University of Virginia

Stewart is a data scientist specializing in biostatistics, clinical trials, and clinical research education. He serves as program director of the Ph.D. program at the University of Virginia's School of Data Science. Prior to coming to UVA as an associate professor, Stewart was faculty at the Vanderbilt University Medical Center where he taught in the Data Science Institute, the Clinical Investigation program, and the Public Health program. At the national level, Stewart served as a founding board member for Biostats4You, a continuously curated website of educational materials sponsored by the Biostatistics, Epidemiology and Research Design Special Interest Group of the Association for Clinical and Translational Science. In 2022, he was elected to the Academy for Excellence in Education. Stewart is a highly collaborative data scientist, including past collaborations with ACHQC, VCKD, and VICTR. He was an organizer of useR! 2022, the international conference for statistical computing and graphics with the R software.

Brian Wright

Associate Professor of Data Science, Program Director

B.S. in Data Science, University of Virginia

Wright serves as assistant professor and director of undergraduate programs at the University of Virginia’s School of Data Science. He is also the School of Data Science director for the School’s first collaboratory with the UVA School of Education. The Collaboratory for the Advancement of Data Science and Education was launched in 2019 with research hubs on economic mobility, replication studies, and education technology implementation. Prior to joining UVA in 2019, Wright developed the master’s of data science

program at George Washington University where he taught for four years. While at GW, he founded their Data Science Institute and helped develop the creation of a joint Ph.D. in education and data science. Wright began his career with the Department of Defense as a management consultant and researcher with a focus on enterprise resource planning conversion.

Aidong Zhang

Professor of Computer Science, Biomedical Engineering, and Data Science, University of Virginia

Zhang is the Thomas M. Linville Professor of Computer Science at the University of Virginia, with joint appointments in the Department of Biomedical Engineering and the School of Data Science. Her research focuses on machine learning, data mining, bioinformatics, and health informatics. Zhang is the author of more than 390 research publications in these fields. In 2021, Zhang became a fellow at the American Institute for Medical and Biological Engineering. She is also a fellow at the Association for Computing Machinery and at IEEE. In 1998, Zhang received the National Science Foundation Career Award. She received her Ph.D. in computer science from Purdue University.

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UVA DATA SCIENCE

Founded in 2019, the University of Virginia School of Data Science—the first of its kind in the nation—is guided by common goals: to further discovery; share knowledge; and make a positive impact on society through collaborative, open, and responsible data science research and education. The School positions the University and our community to play national and international leadership roles in the global digital future.

Robust research is conducted in all four domains of data science across multiple areas of practice and in collaboration with other schools and departments. Educational programs include a B.S. in data science, an M.S. in data science in residential and online formats, a Ph.D. in data science, a minor in data science, and non-degree programs for lifelong learners.

Construction of the School's new 60,000-square-foot home at the intersection of Emmet Street and Ivy Road is on schedule, with its opening set for April 2024. The new building will stand at a vital intersection for the University, connecting Central Grounds with the athletics complex and fields, the Law School, and the Darden School of Business. A vibrant hub built to foster collaboration, the building will bring people together from across the University, Charlottesville, and beyond.

www.datascience.virginia.edu