Ross Joseph Gore

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<u>Summary</u>

I am a research associate professor at Old Dominion University's – Virginia Modeling, Analysis and Simulation Center (VMASC). My research is at the intersection of software engineering, data science, and predictive analytics. I have an active Secret security clearance and mostly perform my work using the R, Java, and Python programming languages. My research focuses on developing methods and supporting tools that provide insight to subject matter experts so that they can identify errors and validate models and simulations. My research using input, intermediary, and output data from models and simulation output. To that end I have provided a free-to-use web based tools to for subject matter experts to conduct this analysis (https://vmasc.shinyapps.io/SensitivityAssessor/) and published 10 different journal articles and conference papers on the topic (1st author on 5 of them). I have served as principal investigator on research awards leveraging these techniques totaling more than 3.5 million dollars, given more than 10 different presentations on this work to industry and academia in 5 different countries. My software has been used to validate and identify errors in models and analysis published in The Atlantic, Quartz, and described on the radio program With Good Reason.

<u>Education</u>

| Ph.D. | University of Virginia, Department of Computer Science. August 2011. Fault | |
|-------|-------------------------------------------------------------------------------|--|
| | Localization for Exploratory Simulations. Committee: Worthy Martin (Chair), | |
| | Paul F. Reynolds (Advisor), Kevin Sullivan, Jack Davidson, Preston White, | |
| | Stephen Turner | |
| M.CS. | University of Virginia, Department of Computer Science. May 2007. Explanation | |
| | Exploration: Exploring Emergent Behavior. Research Advisor: Paul. F. Reynolds | |
| B.S. | University of Richmond, Bachelor of Science with Honors. May 2003. Computer | |
| | Science Major Mathematics Minor Research Advisor Lewis Barnett | |

Recent Work Experience

| 2022-pres. | Research Associate Professor | Old Dominion University |
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| 2014-2022 | Research Assistant Professor | Old Dominion University |
| 2013-2014 | Visiting Assistant Professor | Gettysburg College |
| 2012-2013 | Post-Doctoral Researcher | Old Dominion University |

Selected Publications

- **2018** F. L. Shults, **R. Gore**, W.J. Wildman, C.J. Lynch, J.E. Lane, M.D. Toft. <u>A generative</u> model of the mutual escalation of anxiety between religious groups. *Journal of Artificial Societies and Social Simulation*. Google Scholar Citation Count: 69
- **2018 R. Gore,** C. Lemos, F. L. Shults, and W. J. Wildman. Forecasting changes in religiosity and existential security with an agent-based model. *Journal of Artificial Societies and Social Simulation*. Google Scholar Citation Count: 54
- **2017 R. Gore**, C. Lynch and H. Kavak. <u>Applying Statistical Debugging for Trace Validation</u> of Agent-Based Models. *Simulation*. Google Scholar Citation Count: 27
- 2015 R. Gore, S. Diallo and J. Padilla. <u>You Are What You Tweet: Explaining the Geographic</u> Variation of the Obesity Rate in the United States Through Twitter. *Public Library of* <u>Science (PLoS) ONE.</u> Google Scholar Citation Count: 134
- **2015 R. Gore**, P. F. Reynolds, D. Kamensky, S. Diallo and J. Padilla. <u>Statistical Debugging</u> for <u>Simulations</u>. *ACM Transactions of Modeling and Computer Simulation*. Google Scholar Citation Count: 21

- **2012 R.** Gore and P. F. Reynolds. <u>Reducing confounding bias in predicate-level statistical</u> <u>debugging metrics</u>. In *Proceedings of International Conference of Software Engineering (ICSE 2012)*. Google Scholar Citation Count: 49
- **2011 R. Gore,** P. F. Reynolds and D. Kamensky. <u>Statistical Debugging with Elastic</u> <u>Predicates</u>. In *Proceedings of International Conference on Automated Software Engineering (ASE 2011)*. Google Scholar Citation Count: 41

Synergistic Activities

- 1. More than three years experience serving on the High Performance Computing (HPC) / Big Data (BD) Advisory Committee for Old Dominion University. During this time I have helped make a myriad of different decisions related to the HPC/BD needs and future of the university. URL for more information: goo.gl/9wi7jb
- Senior member of the OpenMx Development Team from 2011 2017. OpenMx is a free, NIH-funded, open source software that allows estimation of a wide variety of advanced multivariate statistical models. During this time he has successfully navigated different statistical or computational modeling issues related to the natural language processing topics referred to in this proposal. URL for more information: <u>https://openmx.ssri.psu.edu/</u>
- 3. Winner of "Practical Application Prize" in the Data For Development (D4D) challenge sponsored by the Orange Foundation and Bill and Melinda Gates Foundation. Solution used anonymized cell phone to identify areas where decision makers could prioritize investments to have the most impact in reducing deaths due stroke or heart attack. URL: <u>goo.gl/3YiEnL</u>
- 4. Regularly helps organize workshops at Old Dominion University related to Big Data and Predictive Analytics. The workshop are held at an introductory level and offer participants expose to the following topics: scalable data processing tools, discovery of patterns in large data sets creation of statistical forecasting models to predict future behavior.
- 5. Winner of "Safety and Security Prize" in the Data For Refugees (D4R) challenge sponsored by Turk Telecom. Solution used anonymized cell phone records and Twitter data to gain insight into where hate speech was used towards Turkish refugees and how Turkish refugees reacted toward violent incidents.
- 6. Regular attendee and presenter at meetings of Hampton Roads Pedestrian and Bicycle Advocacy Committee meetings. This group meets with the Virginia Department of Transportation (VDOT) and the City of Norfolk to discuss planned pedestrian and bicycle path infrastructure. We have constructed a model to inform discussion available at: https://rgore-vmasc.shinyapps.io/norfolk-bike-ped/

Selected Proficient Technologies

R, Java, Python, C#, Linux, Bash, LaTex, Familiarity with Azure / AWS Cloud Services