

# Richard Ross Gruetzemacher III

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Assistant Professor of Business Analytics at Wichita State University August 2021 to present

- Department of Finance, Real Estate and Decision Sciences; Barton School of Business

## Education

- PhD in Business (Management Information Systems; Business Analytics), August 2020, Auburn University
  - Dissertation: *Forecasting Transformative AI*
- Master of Science in Computational Engineering, December 2014. The University of Tennessee, Chattanooga
  - Thesis: *Numerical Simulation of Human Breathing and Particle Transport through a CT-based Pulmonary Airway Geometry*
- Bachelor of Science in Mechanical Engineering, August 2011. The University of Tennessee, Chattanooga

## Other Affiliations

- Executive Director of the Transformative Futures Foresight Institute June 2022 to present
- Research Affiliate at the Centre for the Study of Existential Risk (CSER) at the University of Cambridge June 2022 to present
- Senior Gamemaster for Intelligence Rising (Technology Strategy Roleplay) April 2019 to present
- Foresight Institute Mentor April 2024 to present

## Previous Work & Research Experience

- 2023 Foresight Institute Fellow January 2023 to December 2023
- Visiting Assistant Professor of Business Information & Technology at the University of Memphis August 2020 – August 2021
- Visiting Researcher at CSER at the University of Cambridge July 2019 – September 2019
- Data Scientist at the University of Tennessee, Chattanooga July 2015 to July 2016
- Research Associate at the National Center for Computational Engineering January 2015 to July 2015

## Honors and Awards

- Serving as a Wichita State University representative to the National Institute of Standards and Technology's AI Safety Institute Consortium February 2024 to present
- Received an invitation and funding as a Visiting Researcher at CSER at the University of Cambridge May 22<sup>nd</sup> -June 9<sup>th</sup> 2023
- 2023 Researcher of the Year, Barton School of Business May 3<sup>rd</sup>, 2023
- 2023 Graduate Instructor of the Year, Barton School of Business May 3<sup>rd</sup>, 2023
- 2020 Americas Conference on Information Systems (AMCIS) Advanced Doctoral Consortium selection. August 12<sup>th</sup>-13<sup>th</sup>, 2020
- Best Poster Award for High Impact. Winter Conference for Business Intelligence. Snowbird, Utah. March 3<sup>rd</sup>-5<sup>th</sup>, 2016

## Journals & Periodicals

- R. Gruetzemacher. *Leveraging Foundation Models for Enhancing Scientific Research Productivity*. Global Journal of Computer Science and Technology. December 2023
- R. Gruetzemacher, K.B. Lee, D. Paradise. *An Interactive Calibration Training App for Improving Probabilistic Judgments*. Futures & Foresight Science. December 2023

- R. Gruetzemacher. *The Power of Natural Language Processing*. Harvard Business Review. Digital article April 2022
- R. Gruetzemacher, D. Paradise. *Deep Transfer Learning & Beyond: Future Directions for Transformer Language Models in Information Systems Research*. ACM Computing Surveys (impact factor of 14.3). January 2022
- R. Gruetzemacher, J. Whittlestone. *The Transformative Potential of AI*. Futures (impact factor of 3.8). January 2022
- R. Gruetzemacher, F. Dorner, N. Bernaola, C. Giattino, D. Manheim. *A Research Agenda for Forecasting AI Progress*. Technological Forecasting and Social Change (impact factor of 10.9). September 2021
- R. Gruetzemacher, D. Paradise, K.B. Lee. *Forecasting Extreme Labor Displacement: A Survey of AI Practitioners*. Technological Forecasting and Social Change (impact factor of 10.9). December 2020
- R. Gruetzemacher. *A Holistic Framework for Forecasting Transformative AI*. Big Data and Cognitive Computing. June 26<sup>th</sup>, 2019
- R. Gruetzemacher, A. Gupta, D. Paradise. *3D Deep Learning for Detecting Pulmonary Nodules in CT Scans*. Journal of the American Medical Informatics Association (impact factor of 7.9). October 1<sup>st</sup>, 2018

## Grants and Funding

- \$224,604.00 from U.S. Department of Defense contractor for supporting a cybersecurity data science project. (Technical lead on project.) November 2023 to present
- \$495,510.00 from EA Funds (via Effective Ventures) to support AI strategy and foresight research through TFI. March 2023 to June 2024
- \$158,928.00 from the Survival and Flourishing Fund for research on the use of Bayesian networks in judgmental forecasting. January 2023 to August 2023
- \$45,279.00 from the Alfred P. Sloan Foundation for *Enhancing Scientific Research Productivity with Foundation Models*. April 2022–August 2022
- \$6,000.00 subaward from the Centre for Effective Altruism for AI expert elicitation related to the MTAIR project. June 2020–June 2021

## Work Under Review

- R. Gruetzemacher, T. Pilditch, H. Liang, C. Manning, V. Gates, K. Kilian. *Perceptions of Societal-scale Risks from Advanced AI: A Comparison of Experts and Voters*. Rejected from Science, preparing for submission to Nature Machine Intelligence.
- R. Gruetzemacher, J. Fox, S. Avin, L. Mani, A. Saeri, M. Salmela. Insights from Immersive Scenario Role-play to Explore Strategic Futures in Artificial Intelligence. Under first round review at Futures.

## Working Manuscripts

- R. Gruetzemacher, I. Kumar. *Scenario Mapping*. An invited book chapter for the University of Foreign Military and Cultural Studies Red Teaming Handbook.
- K. Kilian, R. Gruetzemacher. *Complexity Corridors: LLM-Enabled Scenario Discovery for Alternative Futures*. An invited book chapter for the University of Foreign Military and Cultural Studies Red Teaming Handbook.

- S. Avin, L. Mani, R. Gruetzemacher, J. Fox. *Intelligence Rising: Using Role-Playing Games for Foresight on Advanced Artificial Intelligence*. Target: Simulation and Gaming.
- R. Gruetzemacher, M. Nasir, S. Abdinnour. *A Practical Comparison of Transformer Language Models: State-of-the-art Classification for Social Media Customer Service*. Target: Decision Support Systems.

## Works in Progress

- R. Gruetzemacher, T. Pilditch, D. Paradise. *Improving Longer-term Forecasts using Bayesian Networks for Conditional Forecasts*.
- C. Consigny, D. Paradise, T. Pilditch, C. Manning, R. Gruetzemacher. *Generalizability of Calibration Training*.

## Refereed Conference Proceedings

- R. Gruetzemacher, et al. *An International Consortium for AI Risk Evaluations*. December 10<sup>th</sup>-16<sup>th</sup>, 2023  
SoLaR Workshop, NeurIPS Conference 2023.
- C. Manning, S. Zhuma, S. Nagrecha, M. Koutogui, M. Yessoufou, M. Jabbar, R. Gruetzemacher. *Streamlining Science: Recreating Systematic Literature Reviews with AI-Powered Decision Tools*. August 10<sup>th</sup>-12<sup>th</sup>, 2023  
Americas Conference on Information Systems 2023.
- R. Gruetzemacher, S. Abdinnour. *Using Deep Learning for Identifying Social Media Customer Service Opportunities*. August 10<sup>th</sup>-14<sup>th</sup>, 2022  
Americas Conference on Information Systems 2022.
- S. Avin, R. Gruetzemacher, J. Fox. *Exploring AI Futures through Role Play*. February 7<sup>th</sup>-8<sup>th</sup>, 2020  
Conference paper presented at the 3<sup>rd</sup> AAAI/ACM Conference on AI for Ethics and Society (oral presentation).
- R. Gruetzemacher, D. Paradise. *Mapping the Paths to AGI*. August 6<sup>th</sup>-9<sup>th</sup>, 2019  
Conference paper presented at the 12<sup>th</sup> Conference on Artificial General Intelligence. Shenzhen, China.
- R. Gruetzemacher. *Rethinking AI Strategy and Policy as Entangled Super Wicked Problems*. February 1<sup>st</sup>-3<sup>rd</sup>, 2018  
Conference paper presented at the 1<sup>st</sup> AAAI/ACM Conference on AI for Ethics, and Society. New Orleans, LA (oral presentation).
- R. Gruetzemacher, A. Gupta. *Using Deep Learning for Pulmonary Nodules Detection and Diagnosis*. August 11<sup>th</sup>-13<sup>th</sup>, 2016  
Conference paper presented at the 22<sup>nd</sup> Americas Conference on Information Systems. San Diego, CA. (oral presentation).
- R. Gruetzemacher, A. Gupta, G. Wilkerson. *Sports Injury Prevention Screen (SIPS): Design and Architecture of an Internet of Things (IoT) Based Analytics Health App*. May 18<sup>th</sup>-20<sup>th</sup>, 2016  
Conference paper at the 2016 International Conference on Information Resources Management. Cape Town, South Africa (oral presentation and invited for paper development workshop).
- R. Gruetzemacher, A. Arabshahi, R. Pankajakshan. *Effects of Inhalation Transience on Particle Transport Through a CT-Based Human Airway Geometry*. November 13<sup>th</sup>-19<sup>th</sup>, 2015  
Conference paper presented at the 2015 International Mechanical Engineering Congress & Exposition. Houston, TX (oral presentation).

## Conference Presentations & Invited Presentations

- R. Gruetzemacher, J. Fox. *Intelligence Rising: A Strategic Simulation Game for Exploring AI Futures*. EAGxNordics 2023. April 21<sup>st</sup>-23<sup>rd</sup>, 2023
- R. Gruetzemacher. *Generalist Agentive AI and the Power of Multimodal Foundation Models*. INFORMS Annual Meeting. October 16<sup>th</sup>-19<sup>th</sup>, 2022
- R. Gruetzemacher. *Bayesian Networks vs. Conditional Trees for Creating Questions for Forecasting Tournaments*. The 2022 Bayesian Modeling and Applications Workshop at the Conference on Uncertainty in AI. August 5<sup>th</sup>, 2022
- R. Gruetzemacher, D. Paradise, K.B. Lee. *An Interactive Calibration Training App for Improving Probabilistic Judgments*. The 2022 International Symposium on Forecasting. July 10<sup>th</sup>-13<sup>th</sup>, 2022
- R. Gruetzemacher. *Exploring AI Futures Through Role-Play*. The 2022 Effective Altruism Global Conference, London. London, UK. April 16<sup>th</sup>-18<sup>th</sup>, 2022
- R. Gruetzemacher, S. Abdinnour. *Deep Transfer Learning for Classification of Social Media Customer Service Opportunities*. 2021 Conference on AI, Machine Learning and Business Analytics. December 2<sup>nd</sup>-3<sup>rd</sup>, 2021
- R. Gruetzemacher. *Deep Transfer Learning & Beyond: Applications of Transformer Language Models in Business Analytics*. 2021 INFORMS Virtual Business Analytics Conference. April 12<sup>th</sup>-14<sup>th</sup>, 2021
- B. Devlin, N. Sears, M. Maas, E. Bartels, R. Gruetzemacher. *Gaming as a Research Method for Foreign Policy and International Politics*. A roundtable discussion, 2021 International Studies Association Conference. April 7<sup>th</sup>-10<sup>th</sup>, 2021
- R. Gruetzemacher, D. Paradise. *Deep Transfer Learning & Beyond: Future Directions for Transformer Language Models in Information Systems Research*. 2020 Conference on AI, Machine Learning and Business Analytics. December 10<sup>th</sup>, 2020
- R. Gruetzemacher. *Applications of Deep Transfer Learning & Pre-trained Language Models in Business*. AIAA Pre-ICIS workshop. Munich, Germany. December 15<sup>th</sup>, 2019
- R. Gruetzemacher. *Forecasting & Foresight for Transformative AI*. Invited seminar at the European Union Commission Joint Research Center. Seville, Spain. November 22<sup>nd</sup>, 2019
- R. Gruetzemacher. *Defining and Unpacking Transformative AI*. The 2019 Effective Altruism Global Conference, London. London, UK. October 20<sup>th</sup>, 2019
- R. Gruetzemacher. *Forecasting Transformative AI*. Invited presentation at Hughes Hall College Cambridge University. Cambridge, UK. September 24<sup>th</sup>, 2019
- R. Gruetzemacher. *A Holistic Framework for Forecasting Transformative AI*. Invited seminar at the Center for the Governance of AI at Oxford University. Oxford, UK. April 19<sup>th</sup>, 2019
- R. Gruetzemacher. *Tracking and Forecasting AI Progress*. Invited presentation at the Georgia Tech Enterprise Innovation Institute. Atlanta, Georgia. November 16<sup>th</sup>, 2017
- R. Gruetzemacher, A. Gupta. *Using Deep Learning for Detection of Pulmonary Nodules*. Winter Conference for Business Analytics. Snowbird, Utah. March 3<sup>rd</sup>-5<sup>th</sup>, 2016
- R. Gruetzemacher, A. Gupta, G. Wilkerson, J. Haynes. *Sports Injury Prevention & Screening (SIPS): A Demo of a Real Time Analytics System*. Pre-

ICIS Business Analytics Congress 2015. Fort Worth, Texas (prototype demonstration runner up).

- R. Gruetzemacher. *Deep Learning for Detecting Lung Cancer*. The Center for Biomedical Informatics at the University of Tennessee Health Science Center. Memphis, Tennessee. October 14<sup>th</sup>, 2015
- R. Gruetzemacher, et al. *Numerical Simulation of Airflow in a CT-based Human Airway Model with Physiologically Appropriate Boundary Conditions*. 2014 Biomedical Engineering Society Conference. San Antonio, Texas. October 22<sup>nd</sup>-25<sup>th</sup>, 2014

### White Papers and Other Reports

- R. Gruetzemacher, et al. *Envisioning a Thriving Ecosystem for Testing & Evaluating Advanced AI*. Submitted in response to the National Institute for Standards and Technology's request for information on E.O. 14110. February 2<sup>nd</sup>, 2024
- R. Gruetzemacher, et al. *An International Consortium for Evaluations of Societal-Scale Risks from Advanced AI*. An extended version of the report and workshop papers of a similar title, posted as a preprint archive. October 22<sup>nd</sup>, 2023
- R. Gruetzemacher, et al. *An International Consortium for AI Risk Evaluations*. Submitted in response to the U.N.'s request for information for the U.N. High-level Advisory Board on AI. September 30<sup>th</sup>, 2023