Aleksandr Michuda

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PROFESSIONAL SUMMARY

Economist and Data Scientist with a Ph.D. specializing in **causal econometrics**, **machine learning (ML)**, **data fusion** and **Natural Language Processing (NLP)**. Proven track record of leveraging **high-frequency administrative data** and **satellite imagery** to solve complex problems in labor markets, health systems, and climate adaptation. Extensive experience leading **private sector collaborations** with industry platforms (Uber, SafeBoda, and Zipline) and securing over $200,000 in grant funding for experimental research.

TECHNICAL SKILLS

- **Languages:** Python, R, Stata, GitHub, Bash, GAMS.
- **Data Science:** Predictive Modeling, ML-based Causal Inference, Data Fusion, Geospatial/Satellite Analysis, Monte Carlo Simulations, NLP, Web Scraping, LLMs
- **Econometrics:** Experimental Design (RCTs, A/B Testing), Random Coefficient Models, Wild Cluster Bootstrapping, Difference-in-Differences, Regression Discontinuity Designs, Bunching Designs, Synthetic Controls.

PROFESSIONAL EXPERIENCE

Swarthmore College | Visiting Assistant Professor 2024 – Present
- Developing ML-robust linear models to address misclassification bias in causal studies.
- Teaching core courses in **Introduction to Econometrics** and **Economics**.

Cornell University (CDSES) | Assistant Research Professor 2021 – 2024
- Faculty lead for **Breakthrough Tech AI**, mentoring women of color in machine learning and securing industry roles.
- PI on an NSF-funded webinar series focused on research reproducibility and transparency.

Uber Inc. | Data Science Intern Sep. 2019 – Dec. 2019
- Analyzed large-scale administrative data to evaluate the effects of driver rewards on sentiment and productivity using a regression discontinuity design.

PRIVATE SECTOR COLLABORATIONS & PLATFORM RESEARCH

SafeBoda (Uganda) | Principal Investigator 2024 – Present
- Leading two Gates Foundation-funded projects ($200,000+) to conduct randomized platform experiments on income guarantees and earnings flexibility.
- Testing randomized interventions for index-based weather insurance to buffer drivers against agricultural income shocks.

Uber Inc. | Lead Researcher 2019 – Present
- Analyzed proprietary Uber administrative data to demonstrate how weather shocks in rural home regions drive urban labor supply adjustments in Uganda.

- Successfully negotiated data user agreements to leverage private platform data for academic and methodological contributions.
- Analyzed driver data to evaluate labor market effects on COVID-19 policies in Austrailia utilizing a bunching design.

Zipline (Ghana) | Lead Researcher 2023 – Present
- Collaborating with Zipline to analyze high-frequency logistics data from Unmanned Aerial Vehicle (UAV) medical delivery platforms.
- Integrated platform logistics data with **satellite measures of surface temperature** to causally measure the impact of extreme weather on health system capacity.

TECHNICAL PROJECTS & OPEN SOURCE

- **MINIMOD (Python):** Developed an open-source package to evaluate the cost-effectiveness of nutritional interventions using 24-hour dietary intake data.
- **Satellite Nowcasting (ML):** Fused high-frequency household data with satellite imagery to predict human capital disruptions and seasonal recovery in rural Malawi.
- **CRC Models (Stata):** Built and documented a package for fitting and interpreting Correlated Random-Coefficient models, `randcoef`.
- **Wild Cluster Bootstrapping:** Developed packages for robust statistical inference in complex data structures in Python, `wildboottest`

EDUCATION

- **Ph.D., Agricultural and Resource Economics** | UC Davis | 2021
- **BA/MA, Economics** | CUNY Hunter College | 2014
- **BA, Philosophy** | CUNY Hunter College | 2014

SELECTED PUBLICATIONS & WORKING PAPERS

Bird, Samuel S., and Aleksandr Michuda. 2025. "Ethnic Diversity and Voting Behavior at Scale: Evidence from Uganda." *World Development* 196 : 107181.

Colina, Armando R., Stephen A. Vosti, Michael Jarvis, et al. 2025. "Cost-Effectiveness of Fortified Bouillon in Addressing Burkinabe Children's Vitamin a Inadequacy: An Economic Optimization Model." *Annals of the New York Academy of Sciences,*.

Mathur, Mitali, Aleksandr Michuda, and Shotaro Nakamura. 2025. "Registered Report: Risks, Uncertainty, And Flexibility in Gig Work: Evidence via Conditional Income Guarantee Interventions in Uganda." Unpublished manuscript. ***Submitted for publication***.

Michuda, Aleksandr, Adriana Molina-Garzon, and Karen Ortiz-Becerra. 2025. *Temperature Shocks and the Demand for Health Inputs in Ghana.* Technical report.

Tennant, Elizabeth J., Aleksandr Michuda, Joanna B. Upton, et al. 2025. *Nowcasting Disruptions to Human Capital Formation: Evidence from High-Frequency Household and Geospatial Data in Rural Malawi.* Technical Report No. 11202. ***Revise and Resubmit, World Bank Economic Review***.

Tjernström, Emilia, Dalia Ghanem, Aleksandr Michuda, Oscar Barriga Cabanillas, Travis J. Lybbert, and Jeffrey D. Michler. 2025. *A Group Random Coefficient Approach to Modeling Heterogeneous Returns to Technology Adoption.* ***Econometrica forthcoming***.

Michuda, Aleksandr. 2024. "Rural-Urban Risk Sharing Networks: Uber Driver Labor Supply Responses to Shocks in Uganda.".

Vosti, Stephen A., Katherine P. Adams, Aleksandr Michuda, et al. 2023. "Impacts of Micronutrient Intervention Programs on Effective Coverage and Lives Saved: Modeled Evidence from Cameroon." *Annals of the New York Academy of Sciences* 1519 (1): 199–210.

Cabanillas, Oscar Barriga, Jeffrey D. Michler, Aleksandr Michuda, and Emilia Tjernström. 2018. "Fitting and Interpreting Correlated Random-Coefficient Models Using Stata." *Stata Journal* 18 (1): 159–73.