

Viviana Luccioli, M.S.

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As a data science student with a multidisciplinary background, I leverage technical expertise to address complex social challenges, grounding my research and analysis in contextual domain knowledge. My research interests span agentic AI systems with integrity-centered adaptations, socioeconomic modeling, data-driven policy analysis, computational social science, and the application of NLP and machine learning techniques to financial stability.

EDUCATION

GEORGETOWN UNIVERSITY, GRADUATE SCHOOL OF ARTS AND SCIENCES

August 2024 – May 2026 | Washington, DC

Master of Science (M.S.) - Data Science and Analytics (DSAN)

- **GPA:** 4.0/4.0
- **Coursework:** Computational Linguistics with Advanced Python, Big Data & Cloud Computing, Neural Networks & Deep Learning, Machine Learning App Deployment, Probabilistic Modeling and Statistical Computing, Advanced Data Visualization
- **Research advisors:** Dr. Qiwei (Britt) He, Dr. Purna Gamage
- Merit Scholarship: recipient 2024, 2nd place winner 2025
- Outstanding Graduate Student nominee, 2025
- **Graduate Teaching Assistant:** DSAN 6150: Biological and Biomedical Data Science

UNIVERSITY OF VIRGINIA, COLLEGE OF ARTS AND SCIENCES

August 2020 – May 2024 | Charlottesville, VA

Bachelor of Arts (B.A.) - Applied Statistics (Biostatistics Concentration)

- Capstone Thesis: *Homicide and Health: Uncovering Hidden Patterns in Global Homicide Rates*

Bachelor of Arts (B.A.) - Global Public Health

- [Capstone Thesis: Red Light: A Review of Interventions for Detecting Victims of Sex Trafficking in U.S. Healthcare Facilities](#)

- **GPA:** 3.75/4.0
- **Coursework:** Database Management Systems and Business Intelligence, Mathematical Statistics, Population Data Analysis, Demography, Macroeconomics,
- **Research advisors:** Dr. Rupa Valdez, Dr. Gretchen Martinet, Dr. Christopher Colvin

DANISH INSTITUTE OF STUDY ABROAD (DIS)

January 2023 - May 2023 | Stockholm, Sweden

- Study abroad semester
- **Coursework:** Public Health Policy, Public Health and Migration, Data Visualization and Processing, Research: Trafficking in Human Beings for the Purpose of Organ Removal
- **Research advisor:** Dr. Polina Smiragina-Ingelström

ACADEMIC AND PROFESSIONAL EXPERIENCE

Federal Reserve Board of Governors

Statistics, Data Management & AI Intern | Washington, D.C. | May 2025 – Present

- Full-time summer 2025 intern; offered part-time return internship (20 hours/week) through fall 2025 while maintaining full graduate courseload
- Split responsibilities between serving as a Statistics and Data Management intern in the IT Statistics Function Management Office and an AI researcher in collaboration with the Stabilize AI (SAI) Lab
- Collaborate with senior economists and researchers in Financial Stability and International Finance divisions to develop AI agents and workflows using LangChain, LangGraph, and LLM APIs to support research automation, carefully integrating economic considerations with technical implementations
- Build data pipelines and interactive Power BI dashboards integrating Python/R ETL automation for high-volume economic datasets for IT Statistics
- Present technical MLOps pipelines and agentic architectures to non-technical audiences of economists and policymakers, often audiences over 200 people
- Co-authored a paper (accepted to IEEE 2025 Big Data) introducing novel knowledge distillation based methodology for efficient large corpus text classification using, BERT (DistillBERT), LLMs, and machine learning (SVM, LDA, GBDT, RF): Luccioli, Viviana, et al. "LLM on a Budget: Active Knowledge Distillation for Efficient Classification of Large Text Corpora." arXiv preprint arXiv:2511.11574 (2025)

Georgetown University AI Measurement and Development (AIMD) Lab

Research Assistant | Washington, D.C. | Oct 2024 – Jun 2025

- Selected as one of eight research assistants from a highly competitive pool of graduate students for tenured professor Dr. Qiwei (Britt) He's lab
- Conducted a systematic review of 32 empirical studies (2007–2025) on virtual and augmented reality (VR/AR) technologies integrated with autonomous, sensor-based data-capturing systems for educational assessment, ultimately providing academic policy recommendations for technical implementation
- Reviewed 150+ published papers for inclusion
- Synthesized cross-disciplinary evidence to evaluate types of psychometric and behavioral data captured (e.g., eye, motion, and time tracking)
- Manuscript under review (with faculty advisor) for publication, emphasizing the educational potential of multimodal, ML-enabled immersive technologies

Georgetown University Professional Development Center

Student Assistant | Washington, D.C. | Sep 2024 – Present

- Mentor graduate students in technical writing, resume and portfolio development for data science careers through one-on-one collaborative sessions and events
- Authored recommendations and blog content for the [DSAN program site](#)

City of Promise

Data Management & Engineering Intern | Charlottesville, VA | Oct 2023 – Aug 2024

- Designed and implemented a new internal data management system for a community-based nonprofit addressing generational poverty in Charlottesville
- Developed a standardized Self-Sufficiency Matrix, adapted from the Arizona Self-Sufficiency Matrix, incorporating 16 contextual variables (e.g., housing stability, emotional wellbeing, childcare access) tailored to Charlottesville's local socioeconomic landscape, and integrated quantitative and descriptive indicators (e.g., adult-to-child ratio, employment status) to create a composite metric enabling social worker staff to quantitatively and holistically assess mentees' individual and household progress. The matrix has since been institutionalized as organization's core impact-tracking framework
- Engineered Airtable database integrating the matrix for longitudinal tracking of outcomes
- Advised leadership on data-driven strategies for community polling, collection, and evaluation, ensuring methodological rigor and actionable insights
- Presented implementation outcomes to the Jefferson Board of Trustees (audience > 200), directly contributing to the organization securing a \$75,000 grant to expand efforts

Danish Institute for Study Abroad

Research Assistant | Stockholm, Sweden | Jan – May 2023

- Advisor: Dr. Polina Smiragina-Ingelström
- Contributed to multidimensional research project on human trafficking for illicit organ trade with Swedish research team
- Investigated legislative and medical privacy gaps (HIPAA, screening protocols) enabling illicit transplantations and transplant tourism and conducted dark web and international database analyses (UNODC SHERLOC, INTERPOL, FBI) to identify trafficking networks and geographic patterns
- Proposed data-driven prevention frameworks including healthcare reporting systems and EHR alerts for physicians

World Health Organization

Research Assistant | Charlottesville, VA | Sep – Dec 2022

- Advisor: Dr. Christopher Colvin
- Selected by faculty advisor contracted by the World Health Organization to join a small research team revising the 2011 WHO Guidelines for Balanced National Policies on Controlled Substances
- Conducted a policy synthesis report and systematic review of 200+ studies on controlled medicine policy reform and analyzing national drug control frameworks and case studies (e.g., India, Armenia, Kenya, Ukraine) to identify systemic and legislative factors restricting access to essential medicines such as morphine and ketamine

1Cademy - University of Michigan School of Information

Research Intern

Remote | May – Aug 2022

- Collected and synthesized 500+ peer-reviewed studies on medical and social disability research to create hierarchical visual frameworks illustrating information flow and conceptual relationships

- Implemented finalized frameworks into the 1Cademy open data platform, contributing to the University of Michigan School of Information's initiative in knowledge visualization

PUBLICATIONS AND PRESENTATIONS

Luccioli, V. et al. (2025) *LLM on a Budget: Active Knowledge Distillation for Efficient Classification of Large Text Corpora*. IEEE International Conference on Big Data

Luccioli, V. et al. (2025) *Maternal Health and Abortion Policy Across U.S. States*. Poster presented at StatConnect Graduate Research Competition (D.C. Metro Area) — First Place

SELECTED RESEARCH & DATA PROJECTS

The Red Line: Interactive visual narrative dispelling common myths regarding HIV/AIDS (*Final Group Project for DSAN 5200: Advanced Data Visualization, Georgetown University*)

Hidden Numbers: A Machine Learning Exploration of Human Trafficking Detection in Europe (*Final Individual Project for DSAN 5000: Data Science and Analytics*)

Data vs. Dogma: Advanced Statistical Analysis of Maternal Wellness Conditions and Abortion Policy per State (*Final Group Project for DSAN 5100: Probabilistic Modeling & Statistical Computing*) - currently expanding and refining with program director Dr. Purna Gamage for potential journal publication; presented poster at STAT Metro Connect Conference (First Place)

TECHNICAL SKILLS

Languages & Tools: Python (Pytorch, Keras, SciKit-Learn, SciPy, Streamlit), R (ggplot2, dplyr, purrr, tidyr, tidymodels, leaflet, timetk), SQL, Javascript, CSS, SAS, SPSS, HTML, Git, GitHub, DevOps, Excel, Docker, PowerBI, LangGraph, LangChain, LangSmith

Big Data: AWS (EC2, Glue, Athena), Polars, DuckDB, Cloud Computing, Hadoop, Spark, Azure Arc

Data science: Agentic AI, deep learning and neural networks (CNNs, RNNs, Transformers), Computer vision (image processing), machine learning engineering, NLP (search engine and information retrieval design, machine translation, topic modeling, thematic and semantic analysis), LLMs, Bayesian statistics, Time Series (ARIMA, LSTM), Web apps, APIs, Database design, ETL Pipelines

AWARDS AND HONORS

- **Co-author, “LLM on a Budget: Active Knowledge Distillation for Efficient Classification of Large Text Corpora”** — accepted for presentation at the **IEEE Big Data 2025 Conference**. Developed **M-RARU**, a novel active learning algorithm combining knowledge distillation and uncertainty sampling to reduce LLM training cost while preserving accuracy
- Georgetown University Merit Scholarship (2024: Recipient for outstanding academic performance; 2025: **2nd place winner** for 2nd year scholarship competition, awarded on program involvement and [individual project submission](#))
- **First Place** — StatConnect Graduate Poster Competition (2025)
- Nominee — Outstanding Georgetown Graduate Student Award (2025)

LEADERSHIP AND SERVICE

CoPresident, Women in Data Science at Georgetown (2025, Georgetown University)

- Organizer of academic panels and community events promoting women in data fields

President, Global Infectious Diseases Association (2023-2024, University of Virginia)

- Led fundraising, outreach, and educational initiatives promoting public health awareness

Volunteer Bilingual Tutor, Madison House ESOL Program (2020–2024)

- Taught biology and math to high school students in Spanish and English

LANGUAGES AND CITIZENSHIP

- English (fluent) • Italian (native • Spanish (fluent) • French (intermediate)
- U.S. and E.U. dual citizen; born in Washington, D.C.