Hilary Nicole

Systems Analyst |Data Architect| Solutions Engineer

Solutions engineer and design thinker with an interdisciplinary background in AI ethics, machine learning fairness, sustainable development, data governance and analytics management.

Notable Achievements

- Co-created the [Sensitive Terms Dataset](#) and co-authored the [Sensitive Terms Datacard](#) for Google I/O Developer conference codelab on [Product Fairness Testing](#) demonstrating a novel approach to testing generative text data utilizing a socio-technical lens
- Founded the Responsible Innovation (RESIN) Infrastructure team driving strategic planning and development of ProFair's Adversarial Architecture. Leading 10+ team members, five engineers and UX/UI designer through an inclusive design process
- Awarded the 2019 Inspector General's Honor Award for leading forensic data analysis and geographic visualizations showing human networks engaged in millions of dollars of fraud involving FEMA's Individuals and Households Program
- Recipient of the 2019 CIGIE Evaluations Award for Excellence for data analysis and observations on the impact of Zero Tolerance Child Separation Policy and 2018 Inspector General's Award for Cross-Functional Collaboration & Teamwork

Professional Experience

Curaleaf   (July 2022- Current)
Sr. Data Analyst, Data Strategy & Governance, FP&A

Lead data strategy for high growth cannabis company refining diverse ETL processes, identify and deploy computational efficiencies within existing data pipelines. Build rapid prototypes for end-to-end data ETL and visualization dashboards in support of business users including requirements gathering, code development and documentation in Azure Dev Ops, Snowflake, and Tableau.

Community Colleges of Vermont   (June 2022- Current)
Adjunct, Department of Computer Science

Developed course syllabus, prepared student learning activities, and built online course modules in Canvas for Computer Applications classes. Created assessment rubrics, individual labs, group projects and assignments then communicated expectations to students. Engaged students in discussions, provided one-on-one tutoring and support and grading on all student deliverables.

Google   (Jan. 2019 - July 2022)
Systems Analyst, Responsible Innovation (RESIN), ProFair

Develop baseline workflows, assign data roles, compile user journeys and articulate requirements for Annotation UI. Build data pipelines, draft database schema, normalize artifacts in various formats, leveraging internal services and external APIs to curate adversarial test sets.

- Conduct 40+ ML model ethnographies and map AI architectures on various mediums to identify vulnerability points, curate adversarial data sets and execute testing in multiple task domain
- Work with over 100 client product teams across the company's platforms, products and user ecosystems when biased constructs or data are identified to design and deploy relevant mitigation strategies or determine if launch will be blocked
- Successfully launched multiple Breadwinning Women (BWW) events focused on personal wealth and finance; served as sub-committee organizer on She's So STEM in 2020 and 2021 handling speaker identification and #girlswhocode session lead
- Engage in the Genealogies of Data Research Group, critically examining benchmark dataset construction and their constitution as material infrastructure in modern AI systems, resulting in 5 publications, 10 workshops presentations and 4 symposiums

Department of Homeland Security   (Jan. 2017 – Dec. 2018)
Senior Data Analyst, Office of the Inspector General   (Aug. 2017 – Dec. 2018)

Foster a culture of collaborative innovation on a cross-functional multi-agency investigative team. Serve as lead technical strategist and operational data manager utilizing a critical lens to reduce risk, identify security gaps and tackle vulnerabilities.

- Conducted forensic analysis to map geographic hotspots of money laundering activity across 260+ accounts, $425,000+ in fraudulent government deposits and $285,000+ dollars of transaction withdrawals
- Develop target profiles and run graph analysis to link individuals resulting in 11 search and seven seizure warrants, three arrests, one conviction and $588,000+ in total value asset seizures
- Initiated investigative data mining resulting in the identification of $35 million in federal payments on 48,000+ suspected fraudulent claims associated with 133,000+ estimated identify theft victims

Program Analyst, Federal Emergency Management Agency, Recovery Analytics Division (Jan. 2017 – Aug. 2017)

Provide expert advice, guidance, and policy interpretation on a significant number of complex, controversial and precedent setting projects and programs with sub-national, sector level impact; defending controversial findings to C-Suite officials.

- Captured the equivalent human capital cost of estimated $190 million/per year in critical federal data storage and business processing for individual disaster assistance claims by the National Emergency Management Information System (NEMIS)
- Analyze logistic constraints and work with partners across the Office of Response and Recovery, Individual and Households Program to update stock requirements for the Individual Assistance program's Catastrophic Housing Index supply chain
- Developed data-driven surveillance applications utilizing an intersectional lens to identify survivors housing needs from incoming federal disaster assistance applications and integrate with localized data sources to improve early warning forecasts

Standby Task Force (SBTF) (Oct. 2011 – Nov. 2019)

Board of Directors (Feb. 2014-Nov. 2019) | **Coordinator, Digital Humanitarian Network** (Feb. 2015 – Aug. 2016)
Lead, Mapping and Analysis Team (June 2013-Nov. 2015) | **Volunteer** (Oct. 2011-June 2013)

Leverage big data, disruptive technologies and machine learning to serve communities affected by disaster, conflict, infectious disease and other complex emergencies in 15 African, 6 American, 4 Asian, and 3 European countries.

- Collate and synthesize daily intelligence reports from 1500+ all-source intelligence officers and rapid response volunteers, providing situational awareness reporting to humanitarian, military and medical first response personnel
- Train, test and validate algorithms for artificial disaster intelligence and social media reporting systems, processing over 1.5 million data points from qualitative and quantitative sources

Department of Health and Human Services (Nov. 2015 – Jan. 2017)

Management Analyst, HIV/AIDS Bureau (HAB), Health Resources and Services Administration (HRSA/HHS)

Executed data-driven business transformation for the Bureau of HIV/AIDS, communicating strategic health informatics, financial outlays and performance metrics with dynamic visualizations. Developed a Knowledgebase for cross-departmental utilization.

- Advanced innovative data dashboards and dissemination techniques reducing contract costs by $500,000 annually
- Revamped State-by-State impact report, reducing processing time by 50% and repaired strained business partnerships
- Executed policy and trend analysis on seven years of allocations and expenditures data totaling over $4 billion

Tulane University (Aug. 2008 - Oct. 2012)

Employed in various research, practicum and teaching positions while enrolled in graduate studies programs.

- *Lead Data Analyst* - monitored gendered violence and disparate sentencing for New Orleans Health Department
- *Graduate Research Assistant* – Data analysis on Center for Research on Highly Vulnerable Children USAID research grant
- *Data Fellowship* - Strengthened the Moroccan Ministre de la Sante, Department de la Population data collection protocols and reporting of Integrated Management of Childhood Illness (IMCI) program data to WHO and UNICEF
- *Research Assistant* - Conducted gender budget and security audit of international humanitarian funding response to 2010 Haiti earthquake with specific focus on service accessibility and risk for the Disaster Resilience Leadership Academy
- *Policy and Advocacy Practicum* - Worked with Equality Now Regional Africa Office engaging in high-level, strategic advocacy and coalition building promoting transformative gender, security, and protection measures across Africa.
- *Junior Associate* - Conduct literature review and draft concept papers on health system stress, climate-induced migration and health-seeking behavior among asylum seekers for the International Centre for Health, Migration, & Development
- *Graduate Student Researcher* - Mixed-methods intervention research on child maltreatment among single-mother headed households with PTSD in Post-Katrina New Orleans with the Department of Community Health Sciences

Development Services International (July 2009-Dec. 2013)

Director of Research Programs (Dec. 2011 – Dec. 2013) | **Program Coordinator** (July 2009 – Dec. 2011)

Conceived, planned and conducted evaluations mapping gender and sexual violence in post-conflict and humanitarian emergencies settings. Implemented crowd reporting applications to collect data on sexual and gender-based violence. Negotiated grant contracts, performed financial oversight and monitored program impact for reporting to major donors.

- Facilitated the delivery of HIV/AIDS related health communication and education services to 200+ vulnerable children
- Technical lead supervising 15-member cross-functional team, including managing physical, digital, and fiscal resources
- Conducted evaluation research on information and communication technology for development (ICT4D) interventions
- Provided training to agency staff and 100+ aid workers on ICT4D and health informatics

American University (Aug. 2005 - May 2007)

- *Program Lead* **-** Developed curriculums and handled logistical coordination of multi-site research trip to Thai - Burmese border
- *Administrative Assistant* - Organized and executed 10 university-wide events for the Women's and Gender Studies Department

Education
Tulane University, MS(2012)/MPH (2010) Intl. Health & Development, *Complex Emergencies, Quant Methods & Gender-Based Violence*
American University, B.A. (2007) Communications, Economics, Legal Institutions & Government, *Gender & Human Rights*

Technical Competencies
Data/Information Architectures: Snowflake, PostGresSQL, Heroku, StitchData, JSON, Excalidraw, Omnigraph, Automate.IO
Stat Packs & Data Viz: CoLab, Jypter, Tableau, SQL/PLX, SAS, STATA, Looker, i2 Analyst, Centrifuge, Excel/Power BI
Geographic Information Systems (GIS): ARC/QGIS, Ushahidi, Google Earth - KML, Mapbox, CartoDB
Misc. Software: MS Project, Slack, Endnote, Salesforce, Hubspot, MS Office Suite, Google Apps/Analytics, Wordpress
Learning or Dabbled w/: Python, R, BigQuery, Matlab, VBA, Neo4J, D3.js, DOMO, Informatica Analyst, Spanner, HTML

Management Consulting Projects

President, CEO, Lady Eloquence LLC.   (June 2019 – Current)

Angel Investor filling the role of Chief Data Officer, Database Architect and Data Engineer during seed, pre-revenue and early services venture capital raise. Build secure enterprise data assets leveraging cloud architectures and engineer solutions for the collection, management and storage of data for a portfolio of early-stage technology and social business ventures. Provide executive guidance on data governance, information quality and retention strategies, ensuring reliable access and widespread adoption.

TheForem (2021) - Built out phase one of companies cloud database architecture and information schema leveraging Snowflake. Compiled storage and security integrations, credentialed roles and connecting end-to-end data pipelines from PostgresSQL, GCP cloud storage, SaaS (Zoom, Typeform, Calendly, Hubspot) and third-party sources (Google Analytics, Social Media, Stitch, Automate.IO) sources. Stood-up Tableau business intelligence dashboards, analytic products and data services while leading efforts to build data request processes, screened applicants for start-ups first Executive Data Officer, assisted onboarding and promotion of employee development in data access and analysis and facilitated user training on data storage and retrieval systems.

HeyMama (2020) - Mapped the technology ecosystem of an early-stage venture and provided data-driven business insights key to securing over $2 million dollars in venture capital funding and enterprise partnerships. Provided expert guidance and evidence-based guidance, gathered and defined specifications and requirements for data architectures. Built infrastructure for use by an internationally distributed team, engineering end-to-end data pipelines integrating data collection, linking disparate data sets and conducting data modeling. Advised development and management of data policies, authoted metadata schemas and ensured compatibility with emerging web data standards for interoperability.

Divine by Design (2020-Current) - Provide strategic visioning, business development, and creative direction to early-stage social business venture targeting inclusive mental health and spiritual well-being within traditionally underserved communities. Oversee data collection, management, and storage protocols for the organization. Analyze performance and reach of ad and marketing campaigns to derive key insights on customer engagement and inform business strategy.

Objective Reviewer, Office of National Coordinator for Health Information Technology, HHS   (July – Aug.2016)
Expert panel member evaluating High Impact Pilot applications addressing challenges of Comprehensive Medication Management, Laboratory Data Exchange, and Care Coordination with focus on Data Privacy, Information Security, and Interoperable Exchange.

Technical Reviewer - Gender Expert, UNWOMEN   (March – May 2015, May – June 2016)
Performed Phase I & II evaluations in English and French of 150+ grant applications from 50 countries to the UN Trust Fund to End Violence against Women. Determining grantee eligibility and proposal adherence to transformative gender requirements.

Nairobi Community Manager, d'Allant Networks – (Urb.im)   (Oct. 2014- June 2016)
Authored 20+ media articles reviewing gender, urban equity and inclusive planning innovations to promote sustainable development in Nairobi. Increased web-traffic, conversions and stay-time on Nairobi desk by 75% over prior manager.

Gender Specialist, Katuni Consult   (June – Aug. 2014)
Technical consultant responsible for mainstreaming transformative gender priorities in the Department for International Development (DFID) funded scale-up intervention targeting governance and tax accountability of local leaders in Somaliland.

Publications

Amironesei et al. *Machine Vision in Context*. Photographies: Special Issue. Forthcoming

Rashid et al. *Product Fairness Testing for Developers*. Google. developers.google.com. April 2022

Ervin et al. *The Sensitive Terms Datacard*. ProFair, Responsible Innovation (RESIN), Google. Github. March 2022

Hanna et al. *The Case for Interpretive Techniques in Machine Learning*. Fake AI – This Book is an Intervention. Edited by Frederike Kaltheuner. Meatspace Press. December 2021

Denton et al. *On the Genealogy of Machine LearningDatasets: A Critical History of ImageNet* Vol.8 Iss:2 Big Data & Society. July 2021

Hanna et al, *Lines of Site* Logic Magazine. Issue 12. Commons. December 20th, 2020

Special Reviews Group. *ICE Should Document Its Process for Adjudicating Disciplinary Matters Involving Senior Executive Service Employees*. Office of the Inspector General. Department of Homeland Security. OIG-20-54. July, 20, 2020

Denton, et al., *Bringing the People Back In: Contesting Benchmark Machine Learning Datasets*. Proceedings of ICML Workshop on Participatory Approaches to Machine Learning. 2020.

Special Reviews Group. *Initial Observations Regarding Family Separation Issues Under the Zero Tolerance Policy*. Office of the Inspector General. Department of Homeland Security. OIG-18-84. September 27th, 2018

Ervin, H. *Using ICTs to Advance the LGBTI Struggle in Africa*. Pambazuka News. Issue 667. February 26th, 2014

Ervin, H. *Issues in Mapping Sexual Violence and Hate Crimes*. OpenCrisis. February 13th, 2014

Ervin, H. *2013 Annual Report: Profile of DomesticViolence in New Orleans*. New Orleans Health Department

Ervin, H. *Documenting Rape: Comparing Sources in Africa*. Sage Multimedia Encyclopedia of Women in Today'sWorld. 2013

Ervin, H. *Gendering the Integrated Management of Maternal& Child Health Programs*. Ministre de la Sante. Morocco. 2012

Kigoni, C. and Ervin, H. *ICTs, Infrastructure and Entrepreneurship*. ICT & Development. International Federation for Information Processing (IFIP) Technical Commission 9. Makerre University. Uganda 22-23 March 2010

Ervin, H. & Muriithi, C. *The World Financial Meltdown: What Now for African Women?* Pambazuka News. Issue 439. 2009

Ervin, H. *Energy Reduction in Los Angeles*. Synthesis and Regeneration. Issue 44. Fall 2007

Presentations

Ervin, H. & Lacour, R. *Spaces of Vulnerability: Mappingthe Geography of Resiliency in the Context of Armed Conflict and Gendered Violence*Critical Intersections: Conflict, Gender & Power. Center for the Study of Gender and Conflict. George Mason University. Fairfax, VA. April 2015

Ervin, H. *Mapping in a Time of Ebola: Gender Considerationsin Outbreak Response*. Ignite Talk presented at the International Conference on Crisis Mapping. New York, NY. November 2014

Ervin, H., & Lacour, R. *Mapping Sexual & Gender Based Violence: Approaches for Advocates & Practitioners*. Self-Organized Session at the International Conference of Crisis Mapping. New York, NY. November 2014

Ervin, H. *NOPD Response to Domestic Violence*. Domestic Violence Advisory Council. New Orleans, LA. December 2013

Acknowledgements

Svenson, N. The United Nations as a Knowledge Management System (Global Institutions). Rutledge. 1st Edition. 2015

Waldman, A.P., Verity, A., & Roberts, S. *Guidance for Collaborating with Formal Humanitarian Organizations*. Digital Humanitarian Network. July 2013

Tulane University Disaster Resilience Leadership Academy & University of Haiti. *Haiti Humanitarian Aid Evaluation: From a Resilience Perspective*. Tulane University School of Social Work. May 2012.