Akhil Kumar

Undergraduate Student

Toronto, Canada and Philadelphia, USA
📱 *+1 (416) 561 9853*
✉ *akhil.kumar@mail.utoronto.ca*
🌐 *gis.harvard.edu/people/akhil-kumar*
Canadian Citizen and U.S. L-2Y Visa

Education

Expected June 2027

Honours Bachelor of Science (HBSc), University of Toronto
Majoring in Economics and Minor in Mathematics. Clubs: Poker, Hide & Seek, and Running.
Competed in Citadel Summer Invitational Datathon and Point72 Academy Spring Sessions

Professional Experience

May 2024 to April 2025

Government of Ontario, Enterprise Analytics and Insights, Data Science Co-Op
Data Scientist in the Ministry of Public and Business Service Delivery and Procurement

- Identifying and classifying Regulatory Compliance Requirements (RCRs) in Ontario's Laws for the Ministry of Red Tape Reduction alongside data scientists at Microsoft and Accenture
  - Using prompt engineering techniques to count RCRs within sub-sections of all of Ontario's laws while developing model validation KPIs against policy advisor expert counts
- Led GIS data analysis of gene-signal Wastewater data for the Ministry of the Environment
  - Built an exploratory regression model to identify key external variables (e.g. EI Recipients)
  - Implemented efficient temporal and spatial clustering algorithms (e.g. HDBSCAN)
- Helping manage data requests for the Ontario Data Catalogue for 2,900+ datasets from 30 ministries in the government, media reporters, and the public (Team of 5)

Research Experience

2020–Present

Harvard University, Geographic Insights Lab, Researcher
Data Analyst, Reviewed and Wrote Manuscripts, Built Interactive Visuals

- **15** Peer-Reviewed Publications, **315+** Citations (Google Scholar), **12+** Data Dashboards
- Cited by the Supreme Court of India, US Federal Court, and US Members of Congress
- India Sustainable Development Goals Co-Author **Lancet Regional Health** (PDF)
  - Featured on major Indian news (The Hindu, Fortune India, The Wire, etc);
- India State Trend over 30 Years (1993-2021), Google Scholar has Complete List
  - Child Marriage in **Lancet Global Health** (PDF)
    - See Media Coverage in The Hindu, Economic Times, Forbes, and Indian Express
  - Zero-Food Children in **Lancet eClinicalMedicine** (PDF)
    - Almost 6 million Children aged 6-23 Months had Nothing to Eat
    - Featured on Indian News (Indian Express, Telegraph, etc)
  - Zero-Sanitation (aka Open Defecation) in **Journal of Global Health** (PDF)
    - In 2021, over 238 million people didn't have a Toilet and still Open Defecate
- USA Congressional District Life Expectancy
  - Co-First Author in **Social Science & Medicine** (PDF)
  - Mentioned by Congresswoman Carolyn Maloney and Congressman Ro Khanna
- For all other Publications see Google Scholar and for all other Projects, Dashboards and News Mentions (Politico, Scientific American, etc) see Lab Website

Past Research Experience

2020–2022 **Harvard University**, Center for Geographic Analysis Affiliate
Using Geospatial Analysis, Maps, and GIS to Derive Insights. Department Profile

- COVID-19 Excess Deaths in the United States
  - First Author in **Annals of GIS** (PDF)
  - Analyzed Excess Deaths in US States for Specific Causes of Death (Alzheimer's, Cancer, Heart Disease, etc)
- Researched COVID-19's second-order impacts on a US State Department project

Selected Peer-Reviewed Publications; See Full List Here

[1] SV Subramanian, **Akhil Kumar**, Thomas Pullum, Mayanka Ambade, Sunil Rajpal, and Rockli Kim. Early-Neonatal, Late-Neonatal, Postneonatal, and Child Mortality Rates Across India, 1993-2021. *JAMA Network Open*, 2024. PDF.

[2] Jewel Gausman, Rockli Kim, **Akhil Kumar**, Shamika Ravi, and SV Subramanian. Prevalence of Girl and Boy Child Marriage across States and Union Territories in India, 1993-2021: A Repeated Cross-Sectional Study. *The Lancet Global Health*, 2023. PDF.

[3] SV Subramanian, Mayanka Ambade, Smriti Sharma, **Akhil Kumar**, and Rockli Kim. Prevalence of Zero-Food among Infants and Young Children in India: Patterns of Change across the States and Union Territories of India, 1993–2021. *The Lancet eClinicalMedicine*, 2023. PDF and Corrigendum.

[4] Sunil Rajpal, **Akhil Kumar**, Mira Johri, Rockli Kim, and SV Subramanian. Patterns in the Prevalence of Unvaccinated Children across 36 States and Union Territories in India, 1993-2021. *JAMA Network Open*, 2023. PDF.

[5] **Akhil Kumar***, Yogya Kalra, Weihe Wendy Guan, Vansh Tibrewal, Rupali Batta, and Andrew Chen. COVID-19 Impact on Excess Deaths of Various Causes in the United States. *Annals of GIS*, 2022. PDF (*First Author).

[6] Aya Takai*, **Akhil Kumar***, Rockli Kim, and SV Subramanian. Life Expectancies across Congressional Districts in the United States. *Social Science & Medicine*, 2022. (*Co-First Authors) PDF.

[7] SV Subramanian and **Akhil Kumar**. Increases in COVID-19 are Unrelated to Levels of Vaccination across 68 Countries and 2947 Counties in the United States. *European Journal of Epidemiology*, 2021. PDF and Authors' Reply.

Technical Skills

Data Analysis	Data Visualization	Other Software
Stata, Python, R	**PowerBI, Tableau**	**ArcGIS Pro, MS Office**
Power Query	**D3.js, React**	**Figma, GSuite**

Professional References

Fahim Hassan	S.V. Subramanian	Rockli Kim	Wendy Guan
Senior Manager, Enterprise Analytics and Insights at Government of Ontario	Professor of Population Health and Geography at Harvard University	Professor in Health Policy and Management at Korea University; Co-PI of GI Lab	Executive Director, Center for Geographic Analysis at Harvard University