Aarushi Sharma

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About

ML researcher specializing in large language models and computational approaches to policy analysis in high-stakes decision-making contexts. Expertise in uncertainty quantification, probabilistic reasoning, and natural language processing applied to governance and regulatory frameworks. Experienced in developing automated systems for policy research and analyzing how AI models navigate complex rule-following scenarios in international relations and institutional contexts. Proficient in statistical modeling and data engineering for applications requiring adherence to regulatory and policy constraints.

Education

PhD IR and Computer Science, University of St. Andrews *Aug 2023 – present*
MLitt International Relations, University of St. Andrews *Aug 2021 – Aug 2022*
B.A. in Political Science, Ashoka University *Aug 2018 – May 2021*

Research Interests

AI governance and policy compliance, computational approaches to regulatory analysis, uncertainty quantification in automated decision-making systems, intersection of natural language processing and legal/institutional frameworks, AI systems operating under policy constraints.

Work Experience

Quantitative Research Assistant, University of Oxford *April 2025 – Present*

- Developed automated R/Python workflows to scrape, clean, and structure quantitative data from diverse secondary sources, ensuring compliance with data governance protocols.
- Harmonized and integrated large-scale micro and macro datasets to enable robust causal inference analysis while maintaining regulatory compliance standards.
- Applied advanced statistical modeling techniques to quantify policy impacts and institutional factors on socioeconomic outcomes.
- Produced dynamic data visualizations and analytical reports that directly informed evidence-based policy research and regulatory decision-making.

Data Analyst, Foreign and Commonwealth Office (PeaceRep) *Aug 2024 – Feb 2025*

- Developed and implemented machine learning models to analyze policy compliance and regulatory adherence in extensive datasets, enhancing evidence-based policy research.
- Worked on projects requiring automated analysis of policy frameworks and adaptive strategies to address institutional uncertainties and regulatory constraints.
- Collaborated with multi-disciplinary teams to design robust decision support systems that operate within legal and policy boundaries.
- Applied natural language processing techniques to analyze policy documents and regulatory texts for compliance assessment.

Research Assistant, University of St. Andrews *Jan 2022 – Aug 2022*

- Conducted research on historical and modern governance models, applying computational analysis to extract insights about institutional rule-following and compliance mechanisms.
- Utilized natural language processing techniques for automated extraction and interpretation of policy and regulatory documents.
- Contributed to drafting proposals and research reports on governance frameworks and institutional compliance, preparing findings for publication.

Graduate Teaching Assistant, University of St Andrews *September 2023 – Present*

- Developed and delivered instructional materials that explain complex analytical concepts and regulatory frameworks to undergraduate students.
- Demonstrated curriculum to communicate technical principles underlying policy analysis and institutional decision-making in an accessible manner.
- Supported student learning through detailed feedback on policy analysis methodologies and statistical compliance techniques.
- Designed supplementary learning resources to help students grasp foundational mathematical and statistical techniques used in governance and regulatory analysis.

Data Analyst Intern, Centre for Policy Research *May 2021 – Aug 2021*

- Explored migration trends and policy impacts using deep learning and statistical modeling, with focus on regulatory compliance and policy adherence.
- Developed dynamic visualizations to communicate complex policy datasets and regulatory frameworks effectively.
- Engaged in quantitative and qualitative analysis to understand decision-making processes in uncertain regulatory environments.

Publications

Ethics and Normative Traditions: Peace as a Fundamental Norm *Forthcoming*
Aarushi Sharma, Anthony F. Lang Jr., in The Oxford Handbook of Norms Research

Technical Skills

AI and NLP: Natural Language Processing, Large Language Models, Deep Learning
Quantitative Methods: Uncertainty Quantification, Probabilistic Reasoning, Bayesian Methods, Statistical Modeling
Programming: Python, R, SQL
Specialized Applications: Policy Analysis, Regulatory Compliance Assessment, Automated Decision Support Systems, Data Engineering

References

Dr. Phong Le, Lecturer, School of Computer Science, University of St. Andrews
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Prof. Anthony Lang, Professor, School of International Relations, University of St. Andrews
al51@st-andrews.ac.uk