# **Ruth Elisabeth Appel**

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# **EXECUTIVE SUMMARY**

Award-winning researcher combining deep technical expertise in AI with empirical social science to shape safe and responsible AI development.

### AREAS OF EXPERTISE

AI, trust and safety, bias, misinformation, persuasion, elections, causal inference, data science, wellbeing, ethics, privacy

#### PROFESSIONAL EXPERIENCE

# 09/2019 – present

## **Stanford University**

Stanford, US

Postdoctoral Scholar (08/2024 – present)

- Led research on generative AI content moderation preferences to inform AI alignment
- Core contributor to project on third-party AI evaluation
- Showed how social media regulation can inform generative AI regulation
- Led research on deceptive campaigns and election interference as part of a large-scale academic-industry collaboration with Meta analyzing data from 250 million users
- Core contributor to research with Meta on testing misinformation interventions at scale
- Worked with cross-functional stakeholders (e.g., research, engineering, legal)

SAP Graduate Fellow in Science and Engineering & PACS PhD Fellow (09/2019 – 06/2024)

- Led research uncovering why partisans disagree about content moderation in the US
- Led research on a scalable intervention to counter vaccine misinformation
- Led research on the ethics and privacy implications of new technologies
- Core contributor to research on an intervention to improve youth wellbeing using an app
- Communicated results with relevant stakeholders and the public via meetings with high-level decision-makers, conference presentations, popular press articles, and inputs to policy drafts

Teaching Assistant (09/2021 - 12/2021, 01/2021 - 03/2021)

• Led research methods and R programming sections and developed technical course materials

#### 06/2020 - 09/2020

#### Google LLC

San Francisco, US

Quantitative User Experience Research Intern

- Analyzed large-scale Google Cloud user log data to provide UX recommendations
- Added to Google's research infrastructure by importing machine learning software packages

#### 02/2019 - 06/2019

#### **Duke University, Center for Advanced Hindsight**

Durham, US

Health Division Research Associate

- Designed large-scale experiments to improve health behaviors such as vaccine uptake
- Led a workshop on using big data for psychological research

### 04/2017 - 06/2017

# Bonn, Germany

**Telekom Deutschland GmbH** Strategy Department Intern

Provided edtech market analysis and strategic recommendations for senior leadership

# 09/2016 - 12/2016

New York, US

#### **Delegation of the European Union to the United Nations**

Fifth Committee Section (Administration and Budget) Intern

• Prepared and participated in high-level meetings on budget issues and the 2030 Agenda

#### **EDUCATION**

# 09/2019 - 06/2024

# **Ph.D. in Political Communication** (Nathan Maccoby Dissertation Award)

Stanford, US

Stanford University; Ph.D. Advisor: Jennifer Pan; GPA: 4.0

Dissertation: Countering Social Media Manipulation: Three Studies of Social Media Manipulation and Efforts to Counter It

Dissertation Committee: Jennifer Pan, Jeffrey Hancock, Susan Athey, Dan Jurafsky (Chair) Course focus: Research methods, causal inference, science and interpersonal communication Selected courses: ECON293 ML and Causal Inference, ECON281 Experiments for Impact, COMM324 Language and Technology

# 09/2023 - 06/2024

Stanford, US

#### M.S. in Computer Science

Stanford University, Department of Computer Science; Advisor: Dan Jurafsky; GPA: 4.0 Course focus: Artificial intelligence, natural language processing, data science

Selected courses: CS224N NLP with Deep Learning, CS399 Political Bias in LLMs,

CS246 Mining Massive Data Sets, CS145 Data Systems, CS161 Algorithms,

CS129 Applied ML

**09/2017 – 06/2019 Master in Public Policy** (summa cum laude)

Paris, France Sciences Po, School of Public Affairs

Course focus: Emerging technologies and public policy, policy analysis

06/2018 – 08/2018 Visiting Researcher

New York, US Columbia University, Columbia Business School; Advisor: Sandra Matz

08/2013 – 10/2016 B.Sc. Economics

Mannheim, Germany University of Mannheim, Department of Economics; Minor: Political Science

09/2015 – 04/2016 Visiting Student in Economics and Political Studies

Kingston, Canada Queen's University at Kingston, Faculty of Arts and Science; GPA: 4.0

#### PEER-REVIEWED PUBLICATIONS

**Appel, R. E.**, Pan, J., & Roberts, M. E. (2023). Partisan conflict over content moderation is more than disagreement about facts. *Science Advances*. https://doi.org/10.1126/sciadv.adg6799

★ top 5% of all research scored by Altmetric

Matz, S. C., **Appel, R. E.**, & Croll, B. (2022). Privacy and ethics in the age of Big Data. In S. C. Matz (Ed.), *The psychology of technology: Social science research in the age of Big Data* (pp. 379–420). American Psychological Association. https://doi.org/10.1037/0000290-012

**Appel, R. E.**, & Matz, S. C. (2021). Psychological targeting in the age of Big Data. In *Measuring and Modeling Persons and Situations*. Elsevier. https://doi.org/10.1016/b978-0-12-819200-9.00015-6

Matz, S. C., **Appel, R. E.,** & Kosinski, M. (2020). Privacy in the Age of Psychological Targeting. *Current Opinion in Psychology*, *31*. https://doi.org/10.1016/j.copsyc.2019.08.010

#### WORKSHOP PAPERS

**Appel, R. E.** (2024). Generative AI Regulation Can Learn from Social Media Regulation. *NeurIPS Regulatable ML Workshop*, December 2024, Vancouver, Canada. https://ruthappel.github.io/assets/pdf/Generative-AI-regulation-can-learn-from-social-media-regulation.pdf

#### **UNDER PEER REVIEW**

- **Appel, R. E.**, Kim, Y. M., Pan, J., Xu, Y., ..., Kiewiet de Jonge, C., Franco, A., Mason, W., Stroud, N. J. & Tucker, J. A. How deceptive online networks reached millions in the US 2020 elections. Under review at *Nature Human Behaviour*.
- **Appel, R. E.**, Roozenbeek, J., Rayburn-Reeves, R., Corbin, J., Basol, M., Compton, J., & van der Linden, S. Psychological inoculation improves resilience to and reduces willingness to share vaccine misinformation. https://doi.org/10.31234/osf.io/ek5pu. Under review at *Scientific Reports*.
- Pei, R., Grayson, S. J., **Appel, R. E.**, Soh, S., Garcia, S., Huang, E., Jackson, M. O., Harari, G. M., & Zaki, J. Bridging the empathy gap: Reducing empathy misperceptions increases social connectedness. Under review at *Nature Human Behaviour*.

#### SELECTED WORK IN PROGRESS

- **Appel, R. E.**, Pan, J., & Roberts, M. E. How partisanship affects preferences for content moderation in large language models.
- Appel, R.E., Athey, S., Karlan, D., Koutout, K., Luca, M., Manjeer, U., Sacher, S., & Wernerfelt, N. Combating misinformation on social media.
- Minson, J., Erlich, A., Gans-Morse, J., Higgins, C., **Appel, R. E.**, ..., Wang, K., & Zeldin, N. Combating information avoidance in wartime Russia: A multidisciplinary field experiment.
- Longpre, S., Kapoor, S., **Appel, R.E.**, Bommasani, R., Klyman, K., Sahar, M., ..., Narayanan, A., & Liang, P. The Obstacles and Opportunities in Designing Effective External AI Red Teaming.

# POLICY IMPACT AND PUBLIC ENGAGEMENT

**Appel, R. E.** (2024). Strengthening AI Accountability Through Better Third Party Evaluations. https://hai.stanford.edu/news/strengthening-ai-accountability-through-better-third-party-evaluations

- **Appel, R. E.** (2024). EU DSA Election Guidelines Input. https://ruthappel.github.io/assets/pdf/EU-DSA-Election-Guidelines-Input.pdf
- **Appel, R. E.** (2023). It's not just about facts: Democrats and Republicans have sharply different attitudes about removing misinformation from social media. https://theconversation.com/its-not-just-about-facts-democrats-and-republicans-have-sharply-different-attitudes-about-removing-misinformation-from-social-media-216809 ★ read 40k times
- Schaake, M., **Appel, R. E.**, Duplichen, D. M., Einstein, L., Elhai, W., Dhafer Muhammad Faishal, M., ... Zhao, J. (2020). *Input on the European Commission White Paper "On Artificial Intelligence A European approach to excellence and trust."* https://hai.stanford.edu/sites/default/files/2020-07/HAI\_WhitePaper\_v4B.pdf
- Matz, S. C., **Appel, R. E.**, & Kosinski, M. (2019). Rethinking privacy in the age of psychological targeting. https://blogs.lse.ac.uk/businessreview/2019/11/21/rethinking-privacy-in-the-age-of-psychological-targeting/

#### INVITED TALKS

- **Appel, R. E.**, Kim, Y. M., Pan, J., Xu, Y., ..., Kiewiet de Jonge, C., Franco, A., Mason, W., Stroud, N. J. & Tucker, J. A. (2024, September). *How deceptive online networks reached millions in the US 2020 elections*. Cornell Tech, New York, US.
- **Appel, R. E.**, Kim, Y. M., Pan, J., Xu, Y., ..., Kiewiet de Jonge, C., Franco, A., Mason, W., Stroud, N. J. & Tucker, J. A. (2024, May). *Reach of deceptive online networks is limited but highly concentrated*. Hertie School, Berlin, Germany.
- **Appel, R. E.**, Kim, Y. M., Pan, J., Xu, Y., ..., Kiewiet de Jonge, C., Franco, A., Mason, W., Stroud, N. J. & Tucker, J. A. (2024, March). *Reach of deceptive online networks is limited but highly concentrated*. Graphika, virtual.
- **Appel, R. E.**, Kim, Y. M., Pan, J., Xu, Y., ..., Kiewiet de Jonge, C., Franco, A., Mason, W., Stroud, N. J. & Tucker, J. A. (2024, January). *Reach of deceptive online networks is limited but highly concentrated*. Atlantic Council DFRLab, virtual.
- **Appel, R. E.**, Kim, Y. M., Pan, J., Xu, Y., ..., Kiewiet de Jonge, C., Franco, A., Mason, W., Stroud, N. J. & Tucker, J. A. (2024, January). *Reach of deceptive online networks is limited but highly concentrated*. Google Jigsaw, virtual.
- Appel, R. E. (2023, November). Countering misinformation on social media. NABE TEC, Santa Clara, US.
- **Appel, R. E.**, Pan, J., & Roberts, M. E. (2023, November). *Partisan conflict over content moderation is more than disagreement about facts*. Stanford Data Science Democracy Day, Stanford, US.
- **Appel, R. E.**, Pan, J., & Roberts, M. E. (2023, October). *Partisan conflict over content moderation is more than disagreement about facts*. Content Moderation and Free Speech on Social Media Workshop, Munich, Germany.
- **Appel, R. E.** (2021, December). *Ethics and Privacy in the Age of Psychological Targeting*. Promoting Research in Social Media and Health Symposium, San Francisco, US.

#### CONFERENCE TALKS

- **Appel, R. E.**, Kim, Y. M., Pan, J., Xu, Y., ..., Kiewiet de Jonge, C., Franco, A., Mason, W., Stroud, N. J. & Tucker, J. A. (2024, September). *How deceptive online networks reached millions in the US 2020 elections*. Trust and Safety Research Conference, Stanford, US.
- **Appel, R. E.**, Pan, J., & Roberts, M. E. (2024, February). *Partisan conflict over content moderation is more than disagreement about facts*. SPSP Annual Convention, San Diego, US.
- **Appel, R. E.**, Pan, J., & Roberts, M. E. (2023, September). *Partisan conflict over content moderation is more than disagreement about facts*. Trust and Safety Research Conference, Stanford, US.
- **Appel, R. E.**, Pan, J., & Roberts, M. E. (2023, July). *Partisan conflict over content moderation is more than disagreement about facts*. IC2S2 Conference, Copenhagen, Denmark.
- **Appel, R. E.**, Basol, M., Rayburn-Reeves, R., Corbin, J., van der Linden, S., & Roozenbeek, J. (2022, May). *Bad Vaxx Online Game Intervention Increases Discernment and Reduces Willingness to Share Vaccine Misinformation*. ICA Annual Conference, Paris, France.
- **Appel, R. E.** (2021, February). *Mental Health in Context: Individual Differences, Activities, and Locations as Predictors of Momentary Stress, Anxiety, and Loneliness.* SPSP Annual Convention, online.

**Appel, R. E.** (2019, August). *Privacy in the Age of Psychological Targeting*. SPSP Summer Psychology Forum, St. Louis, US.

### **INVITED POSTERS**

**Appel, R. E.**, Pan, J., & Roberts, M. E. (2023, March). *How Partisanship Influences Perceptions of Censorship*. D3 Conference on Inequality in the Digital Age at Harvard Business School, Cambridge, US.

## CONFERENCE POSTERS

- **Appel, R. E.**, Pan, J., & Roberts, M. E. (2023, February). *How Partisanship Influences Perceptions of Censorship*. SPSP Annual Convention, Atlanta, US.
- **Appel, R. E.**, Basol, M., Rayburn-Reeves, R., Corbin, J., van der Linden, S., & Roozenbeek, J. (2022, February). *Bad Vaxx Online Game Intervention Increases Discernment and Reduces Willingness to Share Vaccine Misinformation*. Psychology of Media and Technology Preconference at the SPSP Annual Convention, San Francisco, US.
- Appel, R. E. (2020, February). Privacy in the Age of Psychological Targeting. SPSP Annual Convention, New Orleans, US

#### SELECTED PRIZES AND AWARDS

06/2024	Stanford Communication Department Nathan Maccoby Dissertation Award (\$1,000)
10/2023	LLM Agents Hackathon at AGI House, 3 <sup>rd</sup> prize for personalized AI shopping agent

#### SELECTED FELLOWSHIPS AND GRANTS

09/2024 – present	Stanford Impact Labs Postdoctoral Fellowship
09/2024 - 09/2025	Stanford High Impact Technology Fund Award (\$38,000)
04/2024 - 04/2025	Stanford TomKat Center Innovation Transfer Grant (\$30,000)
12/2023 – 12/2024	Center on Philanthropy and Civil Society Grant (\$2,000)
01/2024 - 06/2024	Stanford Emergence Accelerator Program for Impact Entrepreneurs
09/2019 - 06/2024	SAP Stanford Graduate Fellow in Science and Engineering (\$52,920 p.a.)
09/2022 - 07/2023	Siegel Family Endowment Research Fellow
09/2022 - 06/2023	Center on Philanthropy and Civil Society PhD Research Fellow (\$79,650)
06/2022 - 09/2022	Stanford Impact Labs Summer Collaborative Research Fellow (\$4,000)
02/2020 - 01/2021	Stanford Center for American Democracy Fellow (\$2,000)
01/2014 - 06/2019	Student Fellow of the German Academic Scholarship Foundation (€27,665)

## SELECTED ACTIVITIES AND VOLUNTEER WORK

<b>07/2020 – 06/2024</b> Stanford, US	Communication for Diversity Group Member  • Advised PhD applicants from underrepresented groups and organized information events
<b>05/2020 – 06/2024</b> Stanford, US	Stanford German Student Association Vice President • Co-led Transatlantic Summit on geopolitics and tech (200 participants, \$150,000 budget) • Met with international leaders from politics and business
09/2023 – 06/2024 01/2020 – 05/2021 Stanford, US	Wonks and Techies at Stanford University Group Member  • Co-authored a white paper with suggestions for the EU AI strategy  • Participated in discussions and a talk series on ethics, technology and policy
<b>10/2019 – 09/2022</b> Stanford, US	Stanford Network of Wellbeing at Stanford University Steering Committee Member • Promoted student and community wellbeing by organizing large-scale events

# SKILLS

Computer SkillsPython, R, C++, SQL, GitHub, Markdown, LaTeX, and MendeleyLanguage SkillsGerman (native), English (fluent), French (advanced), Spanish (basic)

# PROFESSIONAL SERVICE

**Reviewer** Nature Communications, PNAS Nexus, Humanities and Social Sciences Communications,

Journal of Elections, Public Opinion & Parties, British Journal of Political Science,

ACM Designing Interactive Systems (DIS)

## PROFESSIONAL ASSOCIATION MEMBERSHIPS

Association for Computing Machinery (ACM), Society for Personality and Social Psychology (SPSP)