Gabor Hollbeck

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Gabor Hollbeck is a physics graduate researcher interested in computational social science,

AI4Democracy applications and AI safety research.

Education

M.Sc. Physics, ETH Zürich	Sept 2022 – Present

- Focusing on complex system dynamics

Visiting Undergraduate Student , ETH Zürich	Sept 2021 – Feb 2022
B.Sc. Physics, Universität Duisburg-Essen	Sept 2019 – Sept 2022

- GPA: 1.2/1.0, ranked first in cohort

Experience

Incoming Visiting Researcher, MIT Media Lab	starting Feb 2025
Student Researcher, Computational Social Science Group, Prof. Dirk Helbing	Feb 2024 – Present

- Complex system optimization via genetic algorithms
- Social choice theory and equal shares aggregation functions applied to LLM fine-tuning

Student Assistant, Institute for Machine Learning @ETH Zürich	Nov 2023 – Apr 2024
Student Assistant, Institute for Science, Technology and Policy @ETH Zürich	Nov 2022 – Nov 2024
Student Researcher, Rahman-spectroscopy on graphen, Prof. Marika Schleberger	Sept 2020 – Mar 2021

Publications

Cannot or Should Not? Automatic Analysis of Refusal Composition in IFT/RLHF Datasets and Refusal Behavior of Black-Box LLMs, NeurIPS (2024)	2024
Congestions and Spectral Transitions in Time-Lagged Correlations of Motorway Traffic. Physica A: Statistical Mechanics and Its Applications, vol. 649, 2024	2024
AI will solve Limits to growth, if ... - A study on AIs influence on the World3 complex systems dynamics model - 2024	2024 (unpublished/preprint)
Generative AI in Voting Advice Applications - A comprehensive comparison of various LLMs and frameworks in their and biases and accuracies in the realm of politics - 2024	2024 (unpublished/preprint)

Coding Projects & Initiatives

Diplomatica.ai – Duolingo for Conflict resolution, Emotional Intelligence, AI Conversation Simulator that gives feedback on communications skills	2024 – Present
Founder, Electomate – Conversational Election Tool that helps voters to make an informed decision	2024 – Present

- Student Research group on AI driven election tools
- Recruiting and leading a team of 20+ people.
- Implementation of tool for 14 countries
- Collaborations with UN and governmental organizations
- Building a globalcommunity of 30+ volounteers

SecondNetwork – Semantically searchable social network with AI matching algorithm to find valubale friends in you curcle of friends	2024

Youtube Content Creator, Polylog (YouTube Channel)   2024 – Present
- Educational videos around theoretical computer science

Co-Founder, The ETH Zürich Alt Protein Project   Nov 2023 – Present
- Think tank and chapter of the global student movement of Alt Protein Projects, selected and funded by the GFI (Good Food Institute), fostering the transformation of the way we produce food sustainably.
- Recruiting and leading a team of 10+ people.

Board Member & Co-Organizer, ZuMUN 2024   May 2023 – Apr 2024
- Organizing a Model United Nations conference for 100+ attendees
- Recruiting and leading a team of 30+ people

Board Member, ETH Model United Nations   Dec 2022 – Jun 2023

Technical Team Member, TUM Carbon – Carbon Removal Initiative   Nov 2021 – Sept 2022
- Calculation of in-sorbent CO_2 diffusion in capillaries
- Approximation of thermodynamic exchange processes
- Pollution Risk assessment

Team Member, TUM Boring – Innovation in Tunneling   2021
- Student initiative at TU Munich and winner of the Not a Boring Competition by SpaceX & The Boring Company

Skills & Interests

Languages: German and Hungarian (native speaker), English (C1), French (B1)

Software/coding: Python (5+ years), Ruby (couple months), Julia (1 semester), React (couple months), MATLAB (1 semester), Mathematica (2 years), Origin (2 years), MS Office, Adobe, Blender

Interests:
Climate Change (Systemic, intersectional justice and prevention), Ideas of Effective Altruism (critique best described here), Mindfulness, Rationality, Social Entrepreneurship, AI4Good, Complex System Dynamics, Political theory, Epistemology, Basketball

Awards and Scholarships

Winner of Politechathon Berlin 2024	2024
1st Place in 3Blue1Brown Competition "Summer of Math exposition"	2024
Winner of project scholarship for young individuals with sustainability focused inititives - U-Change program	2024
Winner of Best Delegate Award at Model UN HSG	2022
Scholar of Promos/DUE Mobil, Scholarship for study-related stays abroad	Sept 2021 – Feb 2022
Scholar of the federal merit-based "Deutschland Stipendium"	Sept 2021 – Sept 2022
1st Place, National Photography Competition of Deutsche Stiftung Denkmalschutz (3000+ participants)	2016

Freelance Videography

Video Producer, German Zero e.V. (carbon neutrality initiative) - produced cinema advertisement
Video Producer, Schalke 04 E-sports - produced advertisement for newly signed players
My second website , 6+ years professional experience, 30+ profession/private projects