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Project / Employer	Timeline	Description	What I did
Casper Association	March 2023 – Present (part time)	The R&D Team at Casper association is working on auditable and compositional financial contracts between untrusted parties, especially in a zero knowledge setting.	Zero knowledge literature review and protocol development, rust, haskell, other distributed systems topics.
Alignable Structures	November 2022	The Long Term Future Fund supported me in running a 4-day conference (view docs site).	Conference operations and logistics (20 attendees for $9k), conference vision (shaping abstracts, schedules, invitations).
Untitled language model forecasting project	August through October 2022	My collaborator Peter Hroššo and I were shocked and energized by the literature on eliciting uncertainty from language models, so we sketched some product ideas and set about acquiring the pytorch experience. It was to be funded by FTX.	Python (mostly data cleaning including information retrieval with the Bier library for the OpenAI API), sketching different user interfaces and asking people what they'd use.
Squiggle	March through August 2022	The Quantified Uncertainty Research Institute is directing the development of the Squiggle language and ecosystem.	Rescript, TypeScript, some devops and project management. (View PRs).
Orbis	January through March 2022	Orbis was a zero-knowledge protocol for the Cardano blockchain.	Seeded the team's coq codebase (view repo).
Ardana	August 2021 through January 2022	Ardana was a stablecoin protocol on Cardano.	Audited the protocol and implementation, identified attack vectors and provided hypotheses of how to mitigate them. Designed formal verification strategy for the team under high upstream code velocity.
AI Safety Camp 5	Spring 2021	My team and I explored Elinor Ostrom's views on common-pool resource problems in multi-agent reinforcement learning.	Python (ray's rllib with pytorch, gym, and wandb). (View code, view writeup).
Sandbox Banking	March through December 2020	Sandbox Banking's customers are credit unions and small banks.	Python (django), Vuejs, ubuntu and docker system administration (Amazon EC2, Route 53), assisting SOC 2 auditors.
Social Media Analysis Toolkit	August 2019 through March 2020	smat-app.com is a frontend to a massive social media ingest serving journalists and social scientists. I co-founded it with Emmi Bevensee after she received a Mozilla grant.	Python, Vuejs, Elasticsearch

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<u>Selected writing</u>
- Bevensee, E., Aliapoulios, M., Dougherty, Q., Baumgartner, J., McCoy, D., & Blackburn, J. (2020). SMAT: The Social Media Analysis Toolkit. ICWSM. https://doi.org/10.36190/2020.18

- Wang, P.; Liu, K.; Dougherty, Q. Conceptions of Artificial Intelligence and Singularity. Information 2018, 9, 79

- High Impact Careers in Formal Verification: Artificial Intelligence (summary in AN#152)

<u>Education</u>
- Bloom Institute of Technology | 2018-2019 | At the time known as Lambda School, I was in Bloom's first data science cohort studying statistics and software engineering. My time there included working as a manager of teaching assistants.
- Community College of Philadelphia | 2016-2018 | GPA of 3.9 in calculus, linear algebra, statistics, differential equations, and discrete math. Time there included working as a tutor for the whole math department.