

Samuel Shadrach

Effective Altruism-related CV points

(My non-EA CV points are not on this page)

- (Tentative) Will likely help in community building to create **EA club at IIT Delhi**, via UGAP program. [Aug 2022 onwards]
- Was among 3 invitees from college tournament to become a Pro Forecaster. Am currently a **Pro Forecaster** at INFER Forecasting. Work 2.5 hours per week. Funded via OpenPhil. [Aug-Dec 2022]
- Completed **Machine Learning Safety Scholars**. Spent 9 weeks (40 hours per week) studying machine learning, deep learning and ML safety. Course involved (among other things) multiple coding assignments in **PyTorch** on ML and ML Safety. Curriculum designed by **Dan Hendrycks, Centre for AI Safety**, course facilitated by Thomas Woodside and other TAs. Funded by FTX Future Fund. [June-Aug 2022]
- Led the **Winning team** (EA Delhi) at **INFER EA College Forecasting tournament**. Competed with EA university groups including Stanford EA, Yale EA, Aalto EA and St Andrews EA. Tournament involved 16 live forecasting questions that resolved throughout the summer. [Apr-Jun 2022]
- Reached **Top 5 teams** in **AI Governance Hackathon** by Columbia EA and Roosevelt Institute. Was awarded prize money for honourable mention. [Apr 2022]
- Reached stage 3 interview process at **Centre for Long-term Risk** (19 of 81 candidates) – Completed 12 hours paid work on **s-risk due to advanced AI systems**, in pursuit of CLR’s research agenda on cooperation and conflict in advanced AI systems. [Apr 2022]
- Completed **ALLFED Taster Task** (15 hours) on Food Governance Body and Indicators [March 2022]
- Selected for **funded trips** to:
 - EAGx Singapore (will be attending) [Aug 2022]
 - EAG London (could not attend due to visa delay by embassy) [Apr 2022]
 - EAGx Prague (cancelled due to COVID) [Dec 2021]
- Completed **Effective Altruism In-depth workshop** by Centre for Effective Altruism [Nov-Dec 2021]
- Have read the Precipice, Superintelligence, and multiple research publications by EA orgs including Rethink Priorities, FHI, CRS
- Active on LessWrong and EA Forum, mostly via commenting.



SAMUEL DAVID ANAND SHADRACH



ACADEMIC DETAILS

Year	Degree / Board	Institute	GPA / Marks(%)
---	B.Tech and M.Tech in Biochemical Engg & Biotechnology	Indian Institute of Technology, Delhi	8.093
2018	CBSE Grade XII	Bloom Public School	87.4%
2016	CBSE Grade X	Bloom Public School	10

IIT DELHI THESIS

Title: (Tentative) Work in **estimation theory** to interpret bioreactor data in fully real-time setting [2022-23]
Supervisor: Prof Atul Narang, DBEB
Description: Estimating key paramaters such as cell growth rate while accounting for measurement error and process noise
- Implementing **multivariate Kalman filter** to interpret O₂, CO₂ gas flow rate data from mass spectrometers
- Expanding scope of available differential equation models to handle experimental and instrument conditions

INTERNSHIPS

- **Rari Capital:** Financial risk management, project management [Summer 2021]
- Worked with US-based team that managed **\$1 billion+ AUM** (at peak) in cryptoasset borrowing and lending
- Developed a **novel risk framework** from scratch, to measure liquidation risk in a permissionless real-time setting
- Enabled projects and HNWI clients to configure **custom loan terms** appropriately, protected retail users from undue risk
- Devised recruitment process and established clear hierarchy to **scale team** from 7 members to ~14 members
Received Pre-Placement Offer, Letter of Recommendation from Founder-CEO appreciating first-principles thinking and innovation
- **Market.xyz:** Financial risk management, strategic advisor [Summer 2021, ongoing]
- Orchestrated **creation** of Market.xyz as a sister startup to Rari, to bring lending to Polygon and Fantom ecosystems
- Enabled inter-team communication with Rari, integrated their risk framework, ideated on new financial products
- Advising Bangalore-based team managing **\$100 million+ AUM** (at peak)

PROJECTS

- **Mock startup in anti-aging sector (Prof Ravikrishnan Elangovan, DBEB)** [Jan-Apr 2022]
- Analysis of **key players** in anti-aging sector, products in market and in R&D, tech advances and gaps, patents filed
- Detailed a **drug discovery** platform using datasets of plant secondary metabolites for generic anti-aging drugs
- Developed **unique value proposition**, competitor analysis, key potential failure modes, funding strategy, timelines
- Semester-long research and brainstorming project, under course BBL751 Biotech Entrepreneurship
- **Fast top-k search of natural language queries in knowledge graphs (Prof Srikanta Bedathur, CSE)** [Sep-Dec 2020]
- Used NLP libraries **spacy, wordnet and nltk** for custom synset-based similarity functions and parts-of-speech tagging
- Optimised for **HPC system** with large dataset, using appropriate data structures and RAM and disk usage management
- As part of course COL764 Information retrieval and web search
- **Affordable nutrition for construction workers in Delhi slums (Prof PVM Rao, HoD Dept. of design)** [Jan-May 2020]
- Semester-long design thinking project, under course HSL704 Inclusive innovation: theory and practice
- Selected for radio science foreign internship (Prof David Michelson, UBC Columbia): ^Cancelled, COVID [Summer 2020^]

SCHOLASTIC ACHIEVEMENTS

- **Top 5 teams, AI Governance Hackathon:** Out of 40+ participants, awarded by Roosevelt Institute and Columbia EA [Apr 2022]
- **KVPY Scholar:** All India Rank 338 of 50,000+ applicants. By Dept. Science and Technology, Govt. of India [2016]
- **JTSE Scholar:** Awarded Junior Science Talent Search Examination Scholarship by the Govt of Delhi, India [2014-15]

TECHNICAL SKILLS

- **Machine learning, Deep learning, ML safety** - accelerated online interactive course (40h/wk * 9 wks) [Summer 2022]
- Secured funding from FTX Future Fund. Facilitated by Dan Hendrycks, Thomas Woodside, Univ. of California, Berkeley
- **Programming** - SML, VHDL, MIPS Assembly; MATLAB, R, Numpy, PyTorch; Python, C++, JS, NodeJS
- **Finance** - Futures and options pricing, Markowitz MPT and CAPM, stochastic calculus basics, market-making basics
- **Blockchain and decentralised finance (DeFi)** - Advanced-level knowledge of most topics

EXTRA CURRICULAR ACTIVITIES

- **Debate:** Participated in multiple debates across multiple debate formats through IITD debate club [Across 2018-19]
- **Semi-finalists** - Asian Parliamentary Debate - House Exposition 2019 - out of 20+ participant teams [Nov 2019]
- **Breaking Speaker** - Stalwarts 2018 - out of 50+ participants across freshers at IIT Delhi [Sep 2018]
- **Aarohan Project, Vidya Project:** Taught physics to economically weak students for JEE-Mains, Advanced [Across 2018-19]
- **Drums:** Trained professionally for 6+ years; Attained Grade 6 certification from the Rock School of Music, London [2016]



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IIT COURSE

Degree	Institute	CGPA
B.Tech and M.Tech in Biochemical Engg & Biotechnology	Indian Institute of Technology, Delhi	8.093

QUALIFYING EXAM

- **Joint Entrance Examination (JEE) Advanced Rank:** 4088 (GE)

COURSES DONE

Linear Algebra & Diffe. Equa., Calculus, Differential Equations, Inclusive Innovation: Theory and Practice, Bioinformatics, Introduction To Psychology, Computer Architecture, Digital Logic & System Design, Information Retrieval And Web Search, Process Dynamics And Control, Selected Topics In Philosophy, Modeling & Simulation Of Bio., Biotechnology Entrepreneurship, Digital Logic & System Design

EXTRA CURRICULAR ACTIVITIES

- Breaking Speaker (5 days || Fresher Extempore), Stalwarts 2018 (September, 2018 - September, 2018)
- Semi-finalist (Asian Parliamentary Debate), House Exposition 2019 (November, 2019 - March, 2020)