

Kshitij Sachan

kshitijsachan.com | (469)-247-3450 | kshitijsachan39@gmail.com

WORK EXPERIENCE

- Redwood Research**, Member of Technical Staff June 2022 - Present
- Proposed and led project on a novel debate protocol using consistency checks (in-progress)
 - Explored various interpretability and black-box techniques for mechanistic anomaly/trojan detection
 - Used causal scrubbing to recover induction head/parentheses-balancing circuits in small transformers
 - Set up and maintains Redwood's AWS compute cluster with autoscaling using Ray
- Jane Street**, Trading/SWE intern June - August 2021
- Only SWE intern ever to receive full-time offer midway through internship; then switched to trading
 - (SWE) Built an OCaml tool to transpile massive domain-specific-language LISP expressions into CSVs
 - (Trading) Explored different python models to predict the opening auction size across all NYSE stocks
- Intelligent Robotics Lab—Brown University**, Research Assistant September 2019 - June 2022
- Implemented a novel reinforcement learning skill discovery algorithm for exploration/planning in Atari video games and robotics
- Geopipe**, SWE intern June - August 2019
- Developed an OpenGL CAD-like visualization tool to render/interact with rich 3D models of NYC
 - Utilized computer vision algorithms to detect coordinates of all 20,000+ water towers in NYC and used that data to train a neural network that detected water towers from satellite images and LIDAR data

SELECTED PROJECTS (see personal website)

- Ultimate Frisbee Analytics** September 2022 - Present
- Conducted first ever analysis on how to calculate the expected value of an ultimate frisbee player; currently advising Boston pro frisbee team with these findings after winning their data competition
 - Set up a pipeline to convert drone footage into a database of player/disc positions using computer vision
- News Aggregator Website** January - August 2020
- Built a website that displays the top news stories of the day across all major newspapers.
 - Algorithm scrapes 1,000s of articles per hour to extract key phrases, constructs a graph of related articles, and partitions the graph to cluster articles by topic
- Predicting Newspaper Biases from Twitter Data** December 2019 - May 2020
- Predicted the political leanings of 180 regional newspapers with 82% accuracy by applying decision tree/clustering algorithms on their Twitter followers

EDUCATION

- Brown University**, B.S/M.S in Applied Math-CS, 4.0/4.0 GPA (magna cum laude) Graduated May 2022
- One of 6 students accepted into Brown's 4-year Concurrent Bachelor's-Master's program
 - One of 25 students to receive Brown Computer Science Senior Prize for academic prowess
 - *Computer Science Courses*: Deep Learning, Reinforcement Learning, Algorithms, Software Engineering, Computer Systems, Distributed Systems, Functional Programming, Programming Language Theory, Data Science
 - *Math Courses*: Real Analysis, Proof-based Linear Algebra, Numerical Linear Algebra, Probability, Computational Probability, Ordinary/Partial Differential Equations

SKILLS

Proficient - Python, Java, C, OCaml | **Some Experience** - Rust, Go, C++, Scala, JavaScript, HTML/CSS, SQL