Siddharth Sachdeva

https://siddsach.github.io
siddsach@gmail.com

***RESEARCH INTEREST*:** Using data science tools and economic tools to direct resources to nature-based climate solutions

EDUCATION

BA, Honors, Statistics **June 2018**
University of Chicago

WORK EXPERIENCE

Data Scientist **November 2019 –**
AQUABYTE *San Francisco, CA*
Aquabyte is a leading AI Aquaculture company. I lead work on our lice product, which automatically monitors sea lice populations in Aquaculture farms across Norway for reporting to the Norwegian government

- Built machine learning models to improve the efficiency of our sea lice counting pipeline by automating biological annotation work, reducing costs by 40X
- Designed experiments and data collection efforts to validate hypotheses and make data-driven recommendations to drive real-world operational changes such as
    - Helping our field team understand how to position cameras in a farm given historical fish behavior
    - Building human-in-the-loop annotation workflows to improve quality and scalability of data collection.
- Collaborated with biologists to build a statistical model to predict outbreaks in the sealice population and worked with product manager to build this into a product that makes recommendations to farmers about when to make interventions.
- Working with the Norwegian government to define standards and regulation for automated reporting of sea-lice counts.

Machine Learning Engineer **August 2018 – November 2019**
ROAM ANALYTICS *San Mateo, CA*
Building Natural Language Processing tools that make humans more efficient at reviewing text data in ***Telemedicine***, ***Insurance, and Pharmacovigilance.***

SELECTED PROJECT: Message Router

- Built a decision support tool for triaging patients for a large telemedicine company (One Medical). This system automatically chooses who should answer a patient message based on the language content of the message.
- Worked with business/clinical stakeholders at the executive level to define goals of the project, identify requirements, and present impact reports. Led to conversion of $200K contract as well as generating interest for new projects.
- Achieved 84% accuracy (within ~0.1% human performance) automatically triaging 30k messages a week from real patients to real doctors.

Impact Investment Intern **June 2015 – August 2015**
AAVISHKAAR *Mumbai, India*
India's largest Impact investing fund, funded by leading development finance institutions, focused on new ventures in rural India.

SELECTED PROJECT: Triton Foodworks, India's first commercial-scale hydroponic produce company

- Wrote and delivered pitch for Hydroponic farm to Aavishkaar's investment committee that led to 7-figure investment.
- Led ground research by speaking to vegetable sellers and local Supermarket managers to understand where they source their produce, who buys what, and how they make decisions.
- Contributed to on-site due diligence process at the farms, learning how the farmers acquired their knowledge, and what operations looked like to better evaluate sustainability of the ground operations.

- Conducted intensive deal sourcing, finding and calling dozens of Indian startups to learn about their business models, and screen potential investment opportunities leading to Triton Foods

PROJECTS

Student Startup Founder / Software Engineer **December 2016 – June 2018**
FLIPSIDE *Chicago, IL*
Motivated by media and political discourse in 2015-2016, I built an AI-based media tool to improve online political discourse by exposing people to different points of view

- Won 33k grant funding from multiple venture competitions including the Booth business school's flagship venture competition, the #1 University Accelerator in the country
- Recruited and Led 5-person team working over the summer and through the academic year on user research, product development, fundraising, and marketing and supported 750+ weekly active users.
- Designed, Implemented Data Visualization system to show users the different sides of an issue based on user-provided data. Worked with front-end developer on my team to show people instant reports to see which side they are on for a given article using Matrix Factorization, Dimension Reduction, Clustering, and Statistical Analysis

Research Projects at UChicago **December 2016 – June 2018**
Toyota Technological Institute of Chicago *Chicago, IL*
University of Chicago/Renmin University *Beijing, China*

- Research with Prof. Karl Stratos on interpretability of machine learning models for natural language processing, culminated in this blogpost
    - Developed method for visualizing text feature importances to understand ingrained biases of the model
    - Used this visualization method to compare the biases of models trained on Google News to Wikipedia.
    - Showed that Google News models have subjective bias on polarizing topics such as climate change.
- Project during study abroad in Beijing with Economics Professor Victor Lima in my Applied Price theory class reviewing economic models of automation.
    - Emphasized model of demand for human labor given automation that broke down automation into its substitution effect for human labor and its complementary effect on human labor
    - Used publically available economic data to calculate proportion of low-skill to high-skill jobs and manufacturing sector to service sector jobs over time to validate predictions about the effect of automation.

SKILLS

Fluent
Python
- Seaborn/Matplotlib/Plotly (visualization)
- Pandas
- PyTorch (Deep Learning)
- Scikit-learn

Bash
PostgreSQL
Conversational
R
Javascript
Docker
Mandarin Chinese (Certificate in Advanced Chinese from UChicago)
Hindi

RELEVANT COURSEWORK

Social Science

- Introduction to Microeconomics
- Elements of Economic Analysis 1
- Financial Accounting (Booth School of Business)
- Advanced Applied Price Theory
- New Ventures (Booth School of Business)
- Economic Development of China (Renmin University Study Abroad)
- Politics of China (Renmin University Study Abroad)
- Philosophical Perspectives
- Classics of Political Philosophy

Computational Science

- Deep Learning
- Nonparametric Inference
- Multivariate Data Analysis using Matrix Decomposition
- Machine Learning
- Numerical Linear Algebra
- Statistical Theory and Methods
- Multivariate Calculus
- Cluster Computing and Hadoop
- Computer Science W/ Applications
- Applied Regression Analysis