



# Vivek Menon

BLOCKCHAIN DEVELOPER · AI RESEARCHER · TECHNICAL LEAD

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## Summary

Data Lead driven by improving business performance through intelligent software. 5+ years in leading remote and live teams across multiple verticals, typically specializing across exploratory data analysis, machine learning, insight discovery, blockchain research, serverless architecture, big data management, & other experimental technologies. Also a fan of fractals, Vim, quantitative investing, cryptocurrencies & cats.

### DATA

Python (NumPy, SciPy, Pandas, Matplotlib, Seaborn, Keras, TensorFlow, Jupyter, Edward, PyTorch), R (tidyr, dplyr, ggplot2), Julia (Gen, IJulia, JuMP.jl, GladFly.jl), SQL (PostgreSQL, MySQL, CloudSQL), NoSQL (MongoDB, DynamoDB, DataStore, GraphQL), Redis

### DEVOPS

Google Cloud Platform (Compute, Cloud Functions, Cloud Run, PubSub, BigQuery), Amazon Web Services (EC2, Aurora, Redshift, Lambda, S3), Firebase (Functions, Firestore), Kubernetes (Docker, Shopify, Wordpress), Linux (Ubuntu, NixOS, Arch), Vagrant, CircleCI

### DEVELOPMENT

Python (Django, Flask, Requests, Coconut, Hy), TypeScript (NodeJS, JQuery, Axios, Express, Lodash, Async.js, Request, PM2, Vue), Haskell (GHC, Stack), Shell (Bash, Zsh), CSS (Sass), HTML, Ruby, Git, Clojure (Aleph, Core.async), LaTeX, Markdown, Microsoft Excel (VBA), Solidity, Vimscrip, Elisp

## Experience

### Lake Finance

Toronto, CA

#### Co-FOUNDER & CTO

May 2018 - Nov. 2019

Co-founded a fintech company with a mandate to engineer a practical set of globally relevant digital financial tools; built with AI, cloud, & blockchain technology, scaled up to 11+ strong through bootstrapping, open-source grants and consulting.

- Graduated from the University of Toronto's inaugural Creative Destruction Lab (CDL) Blockchain-AI (BcAI) 18/19 9 month incubator, raising \$100K at 6%.
- Launched invite-only beta (\$120K over 200 users) of Lake Wealth, which provided AI-driven cryptocurrency portfolios via daily predictions at <0.1% fees via an asynchronous set of Google Cloud Compute, Cloud Run, Datastore, CloudSQL & CloudScheduler services, to provide passive non-custodial investing.
- Wrote Hydra AI; a proprietary portfolio selection engine in Python/Cython that applies price momenta & genetics to hunt for alpha via random search converging in  $\mathcal{O}(n \log n^2)$  by searching for conditional return and extreme volatility (black swan events), benchmarked with paper and live capital over 2 years
- Architected Lake Trade, an open source Decentralized Exchange (dEX) allowing Ethereum users to trade ERC-20 / ERC-721 assets using the 0xV2 Protocol. Provided at cost & fees for the Open-source community; raised \$100K grant from 0x Team to continue development in the blockchain and DeFi space.

### Juniper Park \TBWA

Toronto, CA

#### LEAD DATA SCIENTIST

Nov. 2016 - Apr. 2018

Led the Toronto division of the global TBWA Digital Arts Network (DAN) and Apple's Media Arts Lab (MAL) by providing multi-platform analytics, end-to-end data solutions, & bespoke measurement strategies.

- Built materials across 3 cities in the TBWA Network to pitch & solve business problems for 10+ global clients, including NFL, Nissan, Pfizer & Apple.
- Supervised a \$2M Adobe Marketing Cloud stack for Capital Group / American Funds, optimizing analytics via human analysis and machine learning to convert investors & advisors and grow their \$1.3 Trillion AUM.
- Led a 3 person cross-departmental team in partnership with TBWA\CHIAT\DAY to focused on discovering creative applications of AI, focusing on artificially-generated creative content via Tensorflow Magenta.

### JWT Mirum

Toronto, CA

#### DATA SCIENTIST

Jun. 2015 - Nov. 2016

Deployed analytical technologies for high volume clickstream analysis, developed data-powered strategies for customer segmentation, championed intellectual property acquisition, & led development teams.

- Built bespoke data solutions for 11+ clients, including new-to-market products such as Adidas (Avenue A) & Campari (Baron Samedi), alongside mature offerings like Montreal Canadiens (Club 1909) and Pfizer Centrum
- Developed end-to-end data strategies for clients like UNICEF, McCain, & Getty Images powering recommendation engines via data pipelines, often requiring database architecture, executive KPI frameworks, predictive modeling via machine learning, insight visualization & reporting, and executional tactics.

### Grip Ltd.

Toronto, CA

#### DATA ANALYST

Jul. 2014 - Jun. 2015

Discovered, presented, and implemented data-centric strategies, with an objective to simplify objectives and tactics for local and international stakeholders.

- Tracked 400K+ anonymous user clickstreams by mapping over DNS Servers, Omniture Analytics, & Google Analytics for the YUM Group (KFC, Pizza Hut, Taco Bell)
- Constructed 3-day automated KPI target generation system that tested & rendered a family of ARIMA models for Honda & Acura Canada using live sampled web data, for 12 internal stakeholders with unique KPI objectives.

# Education

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## Udacity

Remote

### NANODEGREE(S)

September, 2017 - May, 2018

Member of some of the inaugural classes of the Nanodegree Program, as curated by Udacity, in partnership with IBM Watson, Amazon Alexa, Github, AT&T, OpenAI, & Google.

Apr. 2018 **Artificial Intelligence Nanodegree**, *sudokuAI, salesmanAI, nqueenAI, aslAI, pacmanAI, touristAI, faceAI, voiceAI*

Apr. 2018 **Web Development Nanodegree**, *linuxServer, itemCatalog, logAnalysis, movieTrailers, neighbourhoodMap*

Sep. 2017 **Deep Learning Nanodegree**, *introDL, cnnDL, rnnDL, lstmDL, qLearningDL, ganDL*

## Sauder School of Business - University of British Columbia

Vancouver, CA

### B. COMMERCE, DOUBLE MAJOR IN FINANCE & MARKETING WITH A MINOR IN ECONOMICS

September, 2010 - May, 2014

Graduated May '14 with a double specialization and minor with emphasis on financial engineering, marketing behavior, and multi-fractal analysis.

# Research

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## Hydra AI: The Evolutionary Diversification Mechanism

Toronto, CA

### AUTHOR

May 2018

A proposed solution to the *Offline Cardinality Constrained Multi Period Selection Problem*, as described via a patent-pending multi-agent adversarial solution that merges evolutionary strategies with probabilistic AI.

## TaaS as a Service: A Monte Carlo Simulation

Vancouver, CA

### AUTHOR

Jun. 2014

A simple simulation for Hootsuite to show the capabilities of the Monte Carlo model, as applied to traditional Software-as-a-Service metrics like LTV, CAC, MRR, & Churn, using an firm and a a programmatic Monte Carlo simulation for varying business conditions

## Bitcoin Pricing & Volatility: A Multifractal Analysis

Vancouver, CA

### AUTHOR

Oct. 2013

Explored if cryptocurrencies exhibit fractal properties like over-dispersion, long memory and self-similarity, in partnership with the UBC Finance Department.

# Certifications

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## BUSINESS

Jun. 2018 **Artificial Intelligence: Implications for Business Strategy**, MIT Sloan Executive Education

Cambridge, USA

Nov. 2013 **Hootsuite Professional**, Hootsuite

Vancouver, CA

Sep. 2013 **Canadian Securities Course (CSC)**, Canadian Securities Institute

Toronto, CA

## TECHNOLOGY

Aug. 2019 **Solutions Architect Associate**, Amazon Web Services

Toronto, CA

Aug. 2019 **Developer Associate**, Amazon Web Services

Toronto, CA

Aug. 2019 **SysOps Administrator Associate**, Amazon Web Services

Toronto, CA

Nov. 2014 **Web Analytics**, Google

Toronto, CA