



# Vivek Menon

TECHNICAL LEAD · AI RESEARCHER · BLOCKCHAIN ARCHITECT

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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**), CSS (**Sass**, **Less**), Git, HTML, Clojure (**Aleph**, **Core.async**), Haskell (**GHC**, **Stack**), Shell (**Bash**, **Zsh**), C++, LaTeX, Markdown, Microsoft Excel (**VBA**), Solidity, Vimscrip, Elisp

## Experience

### Lake Finance

Toronto, CA

#### FOUNDER & CTO

May 2018 - Aug. 2019

Started a 3 founder 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 University of Toronto's inaugural Creative Destruction Lab (CDL) Blockchain-AI (BcAI) 18/19 stream, raising \$100K at 6%.
- Launched invite-only Beta of Lake Wealth, which provided AI-driven cryptocurrency portfolios for \$120K of user capital via daily predictions from an asynchronous set of GCP Compute, Cloud Functions, Cloud Run, Datastore, CloudSQL & BigQuery instances, to provide truly passive non-custodial investing.
- Wrote Hydra AI; a proprietary portfolio selection model in Python/Cython that applies price momenta, probability and genetics to hunt for alpha in any asset class with a price, by searching for conditional return and extreme volatility (black swan events), benchmarked and tested in digital and traditional markets
- 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 & zero 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, Canada

#### STRATEGIC 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 the TBWA Network to pitch & solve business problems for multiple global clients, including NFL, Nissan, Pfizer & Apple.
- Supervised a proprietary Adobe advertising stack for Capital Group / American Funds using the Adobe Marketing Cloud stack in order target investors & advisors and grow their \$1.3 Trillion AUM.
- Led a 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 turnkey data solutions for new-to-market products such as Adidas (Avenue A), Campari (Baron Samedi), alongside mature brands like Montreal Canadiens (Club 1909) and Pfizer Centrum.
- Developed end-to-end data strategies for clients like McCain, Getty Images & UNICEF powering product 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, Canada

#### 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.

- Wrote custom data-driven user tracking systems by leveraging DNS Servers, Omniture Analytics, & Google Analytics for the YUM Group (KFC, Pizza Hut, Taco Bell)
- Constructed an automated KPI target generation system that tested & rendered a family of ARIMA models bi-weekly for Honda & Acura Canada using live sampled web data.

# Education

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## Udacity

### NANODEGREE(S)

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* Mountain View, USA  
Apr. 2018 **Web Development Nanodegree**, *linuxServer, itemCatalog, logAnalysis, movieTrailers, neighbourhoodMap* Mountain View, USA  
Sep. 2017 **Deep Learning Nanodegree**, *introDL, cnnDL, rnnDL, lstmDL, qLearningDL, ganDL* Mountain View, USA

## Sauder School of Business - University of British Columbia

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

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

### AUTHOR

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

### AUTHOR

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

### AUTHOR

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

## TECHNOLOGY

Aug. 2019 **Solutions Architect Associate**, Amazon Web Services Toronto, Canada  
Aug. 2019 **Developer Associate**, Amazon Web Services Toronto, Canada  
Aug. 2019 **SysOps Administrator Associate**, Amazon Web Services Toronto, Canada  
Nov. 2014 **Web Analytics**, Google Toronto, Canada