

## Experience:

- **Go Outside<sup>3</sup>** – Lead Engineer — January 2023 ~ present (contract)
  - social networking
    - Supervising, instituting, and enforcing best practices for code.
    - Found, campaigned for, developed, administered, and persuaded management to adopt my recommendations for cloud provider, and backend components.
- Jackson Street Capital LLC – Director of Analytics — 2018 ~ 2021 (contract)
  - Venture capital
    - Inherited an internal tool updating it to use **Spring Boot**, which was enhanced over the years, raising [test coverage<sup>4</sup>](#) for the various endpoints and keeping them available publicly for users, reducing development time for portfolio companies immeasurably.
    - Social network, a **Ruby on Rails** project, for portfolio companies to communicate/collaborate in a secure, private manner. My responsibilities included its upkeep and automating as much maintenance as possible.
    - Jobs site for startups compensating in equity-only. For some of our startups that wished to have such a list.
    - Initiated, wrote (using **Ruby On Rails'** best practices), deployed on **Heroku<sup>5</sup>**, and maintain a project management tool.
    - Set up a [video chat solution<sup>6</sup>](#), written in **Java** to conduct our conference calls, allowing us to not have to rely on others' infrastructure for often-private communication, using NodeJS to serve **iOS, Android, Windows mobile** and web clients.
    - Smart address book that automatically recognizes web pages, email addresses, street addresses, and dates in **Ruby on Rails**.
    - Wrote [backend<sup>7</sup>](#) and [ngrok/tor helper<sup>8</sup>](#) to let one get their bank balances and verify whether one can afford the purchase or not, eventually, planning to add a mobile app and SMS support.
    - Continuous Integration System written in **python**, parsing the [junit<sup>9</sup>](#)-formatted XML results file and alerting me to when tests fail to pass by email and SMS (using **Twilio<sup>10</sup>**).
    - [My world clock](#), so I don't call people at odd hours, with time sourced from [PostgreSQL](#) written using **Perl**.
    - [CurrencyStack<sup>11</sup>](#) is a **Python<sup>12</sup>** wrapper for [CurrencyStack<sup>13</sup>](#)'s REST API.
    - HTTP network up-time tool
    - [Alexa<sup>14</sup>](#) Skill to read a Twitter feed for a number of seconds, freeing your eyes to focus on other items of relevance.
    - Using **Python, L<sup>A</sup>T<sub>E</sub>X**, and the **Reddit API<sup>15</sup>**, enabled one to publish given any subreddit as a PDF newsletter.
  - Zppixbot (acquired by Miraheze) – Backend Engineer March, 2022 ~ June, 2022 (contract)
    - Leading provider of chat bots for mediawiki-powered sites like wikipedia
      - Add functionality for currency and unit conversion using **PHP** and **Python**.
  - Copilot Travel April 2020 ~ October 2020 (contract)
    - Travel-booking site
      - Increase test coverage and maintain a continuous integration/continuous deployment system.
      - Authored a white paper on how multimodal travel could be used to ensure punctuality.
  - Fiskkit October, 2015 ~ present (contract)
    - Separating fact from fiction in America's English-language news media
      - Wrote and debugged **Docker<sup>16</sup>** image, reducing new developer on boarding time from days to hours.

<sup>1</sup><https://linkedin.com/in/hdiwan>

<sup>2</sup><https://www.prolificprogrammer.com>

<sup>3</sup><https://go.outside>

<sup>4</sup><https://units.d8u.us/test>

<sup>5</sup><https://heroku.com>

<sup>6</sup><https://chat.d8u.us>

<sup>7</sup><https://bitbucket.org/hd1/jpassword/src/master/>

<sup>8</sup><https://bitbucket.org/hd1/balancehelper/src/master/>

<sup>9</sup><https://junit.org>

<sup>10</sup><https://twilio.com>

<sup>11</sup><https://bitbucket.org/hd1/currencystack/>

<sup>12</sup><https://python.org/>

<sup>13</sup><https://currencystack.io>

<sup>14</sup><https://alexa.amazon.com>

<sup>15</sup><https://github.com/praw-dev/praw>

<sup>16</sup><https://docker.com>

- Maintain NLP stack using [SpaCy<sup>17</sup>](#), and [MySQL<sup>18</sup>](#) in **Python**.
- Twitter [notification bot<sup>21</sup>](#), increasing user engagement with articles by 25%.
- rewrite our article processing stack using Textblob and Flask to return JSON, persisting using MySQL, hosted on AWS, increasing test-coverage to 100%.
- Neural network to classify sentences into fact or opinion using [RJDBC<sup>22</sup>](#), [Caret<sup>23</sup>](#), and crowd-sourcing using **R**.
- Fairy Nanny Niñeras – Project Manager — October 2019 ~ December, 2019 (contract)  
Labour play in Yucatan, Mexico
  - Lead website redevelopment effort
- Home is Good LLC September 2018 (contract)  
Proptech play in Austin, Texas
  - **Python** [Flask<sup>24</sup>](#) backend for scheduling tours of real-estate.
  - Identifying and diagnosing issues in the [React Native<sup>25</sup>](#) front end for the above.
  - User invites system in [Python<sup>26</sup>](#).
- Trac May, 2018 ~ November, 2018 (contract)  
Accelerate the growth and maximize the success of every musician
  - Evaluate HashGraph API
  - Write backend code in **Go**
- Credfin March, 2017 ~ April, 2017 (contract)  
Leading Australian credit-score company
  - Sped up report generation 99% by moving it from **Django** to a **PostgreSQL** stored procedure allowing for real-time, instead of batch, credit score generation.
- RedRoute LLC, May 2015 ~ November 2015 (contract)  
Ride-sharing start up, acquired by Uber
  - Ported ride sharing startup's backend from **Golang** to **Python** with additional test coverage and reliability enhancements.
- AssistMyCase July 2013 ~ December 2013 (contract)  
Automating paralegal work
  - Supervised named entity classification and co-reference calculation using [Stanford NER<sup>27</sup>](#) and [GATE<sup>28</sup>](#), saving our law firm clients over \$200,000 in annual employee expenditure.
  - Managed and mentored junior developers in **Java**.
- Cydesign Labs April 2012 ~ July 2012 (contract)  
ARPA-backed physics-based modeling system to quickly assess design options against requirements during the conceptual design stage
  - Implemented git on Allura using [TurboGears<sup>29</sup>](#) in **Python**.
  - Devised, designed, speced, and scripted an on-boarding virtual machine image for quality assurance team.
- Game Golf (née ActiveMind Technologies) — Data Scientist — San Francisco, CA and Galway, Ireland — August 2011 ~ March 2012 (contract)  
Norwest Ventures-backed makers of a wearable GPS and motion sensing Golf shot tracking System
  - Successfully isolated patterns in geospatial data from golf games using **R**, saving the company over \$64,000 in annual salaries.
- Economic Risk Management – Quantitative Analyst — Berkeley, CA — April, 2009 ~ August, 2011 (contract)  
Boutique hedge fund, spun out from Morgan Stanley
  - Automated data downloading using [Perl<sup>30</sup>](#).
  - Wrote **Erlang** message-passing system to trigger events – sell positions, manually updating data, generating reports, etc.
  - Designed, installed, and maintained persistence layer architecture in **Java**.
  - Migrated production system from **Google App Engine** to **AWS**, reducing downtime by 30%.
- Quantum 4D – Software Engineer — November 2007 ~ February 2008 (contract)

<sup>17</sup><https://spacy.io><sup>18</sup><https://pymysql.readthedocs.io><sup>21</sup><https://twitter.com/allfisks><sup>22</sup><https://www.rforge.net/RJDBC/><sup>23</sup><https://topepo.github.io/caret/><sup>24</sup><http://flask.pocoo.org><sup>25</sup><https://reactnative.dev><sup>26</sup><https://python.org><sup>27</sup><https://nlp.stanford.edu/software/CRF-NER.html><sup>28</sup><https://gate.ac.uk><sup>29</sup><https://turbogears.org><sup>30</sup><https://www.perl.org>

Venture-backed service modeling the world economy for the American intelligence community

- Clean up **Java** code
- add test coverage for interaction with **Apache JackRabbit**<sup>33</sup>
- Intellectual Property Litigation Center, Stanford University — Stanford, CA — August 2007 ~ November 2007 (contract)
  - Devised the beginnings of the AI engine that became Lex Machina (acquired by Lexis Nexis) in **Java**.
- Willigent, Needham, MA – March 2002 ~ June 2007 (contract)
  - Homeland security contractor
  - Developed and maintained issue tracker using **Java**

## Education:

- **Rensselaer Polytechnic Institute**<sup>34</sup> — Troy, NY
  - B.S. Computer Science, minors in psychology and economics
    - My undergraduate independent study project was accepted into **NetBSD**<sup>35</sup>, and later, Apple, as their Bluetooth driver

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<sup>33</sup><https://jackrabbit.apache.org>

<sup>34</sup><https://www.rpi.edu>

<sup>35</sup><https://netbsd.org>