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## Work Experience

**Patten Capital** | *Founder* | *Quantitative Researcher**Feb 2020 – Present***Chicago, IL**

Pattern Capital is a FinTech start up that democratizes quantitative methods as a low entry investment product. Manages 1.8 Million in AUM.

- Work involves: Model development, validation, feature research and extraction.
- Researched, constructed and implemented 7 new indicators/signals. Used for Market Regime detection.
- NLP for sentiment analysis, Web scraping, API connection and construction, data pre-processing/cleaning and storage, Neural Net research and architecture, Implemented Prophet.
- Set up connections, data funnels and storage for: Yahoo Finance, Reddit, Twitter, Td Ameritrade for market, fundamental and derivative data, Google Trends, Federal Reserve economic data and press releases, FinViz, Robinhood, Dataroma.
- Brought daily data gathering script runtime down from over a hour to under 20 minutes while quadrupling the amount of data gathered. Gathers over 6 gigabytes of data monthly.

**Burnham Nationwide, Inc.** | *Technical Consultant**Feb 2018 – Feb 2020***Chicago, IL**

Burnham Nationwide specializes in plan review and permit expediting services.

- Providing building, zoning, and accessibility code consulting services for local and national projects.
- Focus was on developing internal digital systems for expiating site inspection reports, pioneering searchable databases of building regulations and using these sets to generate reports dependent on specific site criteria, integrating a tasking software to increase accountability and allow for better internal progress project tracking.
- Implemented phone talk time tracking to increase/record billable hours, develop site related report templates and created comparative presentations for potential software integration. All of this done with the goal of creating efficiency and removing barriers within the architectural profession.

**IIT College of Architecture** | *Digital Media Curator**Oct 2017 – June 2018***Chicago, IL****Sanaa** | *Architecture Design Intern**Aug 2017 – Sep 2017***Tokyo, Japan****D + K Architects** | *Architectural Design Intern**May 2017 – Aug 2017***Chicago, IL****Illinois Tech Innovation Center** | *Design Consultant**Feb 2016 – May 2017***Chicago, IL**

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## Personal Projects

**Embedded Ad Removal from Podcasts**

Developed a module that scrapes a named podcast then removes embedded ads that are read by the host or are pre-recorded.

- Gather the Audio file, Convert to text chunks, Classifies the chunks using: str repetition, str matching with database of past ads, music overlay (audio), differences in vocal tone (audio), length of the ad, position of the ad in the text. Then returns the podcast with the embedded ads removed.

**Logistic Regression for Proximity based Housing**

Working on rental property location service that uses binary customer inputs to simplify the “Moving to a new city” experience.

- The goal is to develop a system that makes decisions for people looking to relocate to a new region within a city.

**Predictive Site Locator**

Developing systematic way to link financiers to contractors.

- The goal is to simplify and conduct research on potential building sites earlier in the site scouting process. Potential sites are paired to contractors that specialize in various building typologies; these sites are given grades based on proximity to attractive site conditions.

**Poker Hand Probability Function**

Developed a function that uses the cards in your hand and cards on the table to calculate the chances of winning. Built for online private table poker games.

- Works when cards on the table and cards in other players hands are unknown. Tracks and records card combinations that have already been in play.

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## Education

**Georgia Institute of Technology** | *Master of Analytics – Computational Data Track* | 3.5 gpa**Atlanta, GA****Illinois Institute of Technology** | *Bachelor of Architecture***Chicago, IL**

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## Technical Skills and Software

**Programing Software:** Python (Anaconda and Jupyter Notebook) | R

Python Specific: Pandas DataFrame, Numpy Vectorization, Nltk for NLP, Pytorch, Keras/TensorFlow, Requests, Sklearn.

**Design Software:** Rhino | AutoCAD | Revit | Adobe Suite | Grasshopper | BluBeam | Architectural Photography