

# Siddhant Johan Barua

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## EDUCATION

### Stevens Institute of Technology

Master of Science in Computer Science; GPA: 3.8/4.0

Hoboken, NJ

August 2018 - May 2020

**Relevant Coursework:** Algorithms, Web Programming, Cyber Security, Computer Vision, Operating Systems

Machine Learning, Concurrent Programming, TCP/IP networking, Human Computer Interaction

### PE.S Institute of Technology

Bangalore, India

Bachelor of Technology in Computer Science & Engineering; GPA: 7.03/10

August 2012 - July 2016

## SKILLS

**Front-End Technologies:** React, Bootstrap, Redux

**Languages:** C++, Python, Java, JavaScript, HTML/CSS, Dart

**Database Technologies:** MongoDB, SQL

**Frameworks:** Sklearn, Socket I/O, Flutter, Node.js, Express.js, GraphQL, Spring: Boot

## EXPERIENCE

### Tally Solutions

Bangalore, India

Software Engineer Intern

August 2017 - May 2018

- **Tally Connector** : Mobile Application
  - \* Worked on testing and proof of concept for the Sales Aggregator RESTful Api, built using Dynamic Arrays in Java, reducing end of day sales aggregation from upwards of 45 minutes to a few minutes
  - \* Inventory Management - Helped the migration from an array data structure to a thread safe hash map data structure in Java for fast look-ups, hence increasing efficiency from  $O(N)$  to  $O(1)$
- **Tally.ERP 9 (business management software)**: Incorporated a priority queue data structure in C++ into the Order Management module, prioritizing based on a function of order size, delivery requirement, frequency etc. Hence amplifying delivery compliance by an estimated 24%

### Zynga

Bangalore, India

Game Design Intern

December 2016 - June 2017

- **Farmville Assets**: Designed over 800 assets for the game Farmville
- **Farmville Cadence**: Conceptualized the GET operation for Farm Crops, for over 10 front-loaded monthly Quests
- **Farmville Features & Expansions**:
  - \* Involved in the establishment of 5 features for the Farmville Expansion: Isle of Dreams and Legend of Tengu
  - \* Lead Designer of the Feature Adventurer's Inc, created design specs & XML format as well as performed prototype testing
  - \* Proposed reduction of in-game asset price by 20% for Adventurer's Inc. Resulting in more than 30% increase in in-game spending

## PROJECTS

- **Sync'n Play**: An online cinema experience created using Node.js, Express.js, React, Redux and Socket.IO
  - Implemented a one step authentication interface
  - Users can form watch parties of 2 or more members, and allows synchronized viewing of videos for all members
  - Implemented a chat functionality to simulate the social aspect of cinemas. Can be scaled to a voice chat functionality in the future
  - Incorporated an automatic party entry and party exit protocol for the users using dynamically created shareable links
  - These links act as individual sessions for corresponding parties
- **BudgetFlix**: A video streaming website that aims to emulate the functionality of Netflix, using JavaScript, React, AWS and Python
  - Created Front-End components using React & React video API for playing the videos, Back-End implementation using Express.js, established 14 components
  - Leveraged the salable storage of Amazon S3 web service, to simulate a local movie repository.
  - Includes a like/dislike feature based on which the machine recommends movies (1,000,209 anonymous ratings Training Set)
  - An Auto-Encoder Neural Network model built on Keras and Flask framework, performs the operation of suggesting similar movies
  - Uses Fire-base for authentication
- **Video Game Sales Prediction**: A python based machine learning project that uses periodic sales data of video games in distinct regions and other factors, to predict global sales
  - A Kaggle data-set is used as the basis for training and testing (10,000 unique ratings)
  - The data is cleaned and the relevant factors(columns) are standardized (almost 600 missing ratings)
  - Considers MSE(Mean Squared Error) and MAE(Mean Absolute Error) as the basis for regression model comparison
  - Models established : Linear Regression, Random Forest, Boosting, SVM (Support Vector Machine, Using SVR - Support Vector Regressor)
- **Gym Simulation**: A Java project in concurrency, which aims at modelling a Gym that has clients
  - Each client has a routine, which is a list of objects of class Exercise
  - Each exercise consists of a gym apparatus, corresponding weight-plates & their count (Randomly Generated) and the time it takes to perform it(Randomly Generated), implemented using a Hash Map of objects
  - Clients compete for the use of shared resources - gym apparatus and weight plates. This is modelled using threads, thread pools and the Executor Interface, 30 threads at a time for 1000 threads
  - The hash-maps and hash-sets are made thread-safe using a total of 15 semaphores including semaphore arrays