

KARAN BALAKRISHNAN

Email: karan.b755@gmail.com • Mobile: (213) 425 - 6556

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EDUCATION

University of Southern California, Los Angeles, California

Viterbi School of Engineering
Masters in Computer Science

Graduating December 2018

BMS Institute of Technology, VTU, Bangalore, India

Bachelor of Engineering, Computer Science

June 2014

TECHNICAL SKILLS

Languages & Databases: **Python, JavaScript, Java, Swift, Objective-C, SQL and MongoDB**

Technologies & Frameworks: **AngularJS, NodeJS**, XML, JSON, REST APIs, Bootstrap

Development Tools & Frameworks: **Git, Jenkins, Agile**, Perforce, JIRA, Maven, Scrum

PROFESSIONAL EXPERIENCE

Developer Associate (Front End Mobile Developer) at SAP Labs, India

June 2014 – November 2016

<https://itunes.apple.com/us/app/sap-businessobjects-mobile/id441208302?mt=8>

2 years 6 months

- Implemented and integrated various features into the existing SAP BI Mobile application (~200,000-line code base) using **Objective-C and Swift** extensively
- Built a custom charting framework from scratch using **Core Graphics**
 - Built to handle millions of rows of data, with custom lazy loading pagination and custom gestures
- Implemented **Custom Animations** for scroll, loading and notifications
- **Customized Gesture support** to handle JavaScript and iOS interaction – to handle hybrid content in the application
- **Performance and Memory optimizations** for various features
- Used **Git, Perforce, JIRA and Maven** to collaborate with my team of 35+ members

PERSONAL PROJECTS

- **Personal Website** - <https://hitmank.github.io/>
- **Space Commute (Swift)**: <https://itunes.apple.com/us/app/space-commute/id1238983610?mt=8>
 - iOS game available on the app store
 - Built with Swift using iOS SpriteKit

ACADEMIC PROJECTS

- **Facebook Search (JavaScript, Swift, PHP, Bootstrap, AWS)**:
 - Built a custom Facebook search application using Facebook Graph API. Pulled recent posts and albums of users, groups, events, etc. AWS backend – built with PHP
 - Two versions of the front-end: Web - Built using AngularJS, Bootstrap and iOS - **Built with Swift**
- **Collaborative Filtering Based Recommender System (SPARK)(Scala)**:
 - Built a Model Based and Item Based Recommender system that used a Hybrid Algorithm, which gave recommendations to users based on their purchase history and features of each item.
 - Built on Apache Spark using Scala
- **Frequent Items – SON Algorithm (SPARK)(Scala)**: Implemented the SON algorithm using Scala on the Spark environment
- **Adversarial Constraint Satisfaction by Game-tree Search (Python)**: Minimax algorithm with Alpha-Beta Pruning
- **CYK Parser for probabilistic context free grammar (Python)**: Built for the Natural Language Processing class. Achieved 0.88 F1 score

AWARDS

- **Vice-President award** - Awarded for outstanding contribution towards the development of the native iOS Charting Framework
- Awarded six team level spot awards for contribution to various releases