Neil Sengupta

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Objective: To obtain an internship as a Software Engineering Intern

Skills

- Experience in Java, C++, Python and Data Analysis.
- Experience in MEAN stack development.

Work Experience

San Diego Supercomputer Center, Software Engineering Intern **Summer 2016**

- Implemented algorithms for comparison and high performance clustering of 3D biomolecular structures using Bio-**Java** library.
- Analyzed the usage of **Apache Parquet** for compressed columnar data storage.
- Benchmarked approaches for hosting compressed biomolecular structure representations.

Stanford HCI Crowd Research, Undergraduate Researcher **Winter 2016**

- Built a crowdsourcing platform that aims to improve upon existing crowdsourcing marketplaces such as Amazon Mechanical Turk.
- Built prototypes for the platform using **Angular JS** for front end interactivity.
- Contributed to backend development in **Postgres** and **Redis** to manage sessions, cache and web socket support.

UCSD CSE Department, Section Leader **Fall 2015 – Winter 2016**

- **Lead** and **mentored** a section of 15 students and assisted 200 students on programming skills and programming assignments for **Introduction to Computer Science: Java**.
- Helped students analyze programming logic and develop debugging skills.

Selected Projects

Friends and Food

- Built a responsive web application using **Node.js**, **Mongoose** and **Express JS** for users to connect and schedule lunch timings with friends based on personal preferences and schedule.
- Built fidelity prototypes and interactions in **Sketch** and **Invision** for user testing.
- Led user **A/B testing** experiments for feedback and usability analysis.

Phrase Decoder

- Implemented Viterbi Algorithm in **Python** and **Numpy** to find most likely state of hidden sequences in non-text observations. Algorithm can also be used for speech recognition models.
- Constructed a discrete Hidden Markov Model to model hidden states and observations based on data set.
- Utilized **Matplotlib** to construct a visualization of most likely sequences over time.

Tasker

- Built an **Android** application using **Java** and **Android Studio** that helps people living in shared apartments to coordinate household work with randomly balanced work assignments and keep track of supplies.
- Implemented **Parse backend** to enable creation of data object models and efficiently query data.
- **Unit-tested** code for robustness, edge cases, usability, and reliability.

Chatcomb

- Built a Real time chat server application to model a discussion forum using **Node.js, Express** and **MongoDB**.
- Used **Socket.io framework** for event-based communication to build focused group chats.
- Implemented a clean user-interface keeping in mind usability heuristics.

Education

University of California, San Diego

B.S Computer Science, Graduating in 2018

Relevant Coursework: Design and Analysis of Algorithms, Advanced Data Structures, Artificial Intelligence, Systems Programming, Data Modelling and Analysis, Human Computer Interaction, Operating Systems, Theory of Computation, Linear Algebra, Discrete Mathematics and Graph Theory.