Sahana Rangarajan

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Objective

To gain experience utilizing principles of electrical engineering and computer science, with an emphasis on controls and infrastructure, in data-intensive applications with a wide-reaching range within and outside of the field.

Education

Undergraduate: University of California, Berkeley
Major: Electrical Engineering and Computer Science
Minor: English
Graduated: Fall 2018

Related Coursework

- Math 53 (Multivariable Calculus) & 54 (Differential Equations)
- Computer Science 61A, 61B (Data Structures), 61C (Computer Architecture), 70 (Discrete Math), 186 (Databases), 188 (AI), 161 (Security), 170 (Algorithms), 168 (Internet Architecture)
- Electrical Engineering 16A & 16B (Signals & Systems), 127 (Optimization Models)

Relevant Experience

- **Programmer**:
  - Proficient in Python (including NumPy and SciPy), Java, Scheme, Swift, Excel, Mathematica, C/C++, SQL, HTML, JavaScript, and CSS
  - Extensive experience in machine learning topics (including use of TensorFlow) through research and work experiences detailed below
- **Freelance Mobile App Developer (2014-present):**
  - Independently wrote iOS whale-watching app using identification key logic to collect visual user input and identify cetaceans based on simple traits
  - Formed a team, developed a project, and wrote a money-lending app for Berkeley HackJam 2015
  - Wrote app to automate taste profiles and personalized playlists for Spotify users using Spotify's API
- **Research Intern at UC Berkeley**
  - **Hybrid Systems Laboratory (2018-present):**
    - Using MatLab to simulate hybrid energy systems
    - Investigating low rotational inertia and battery energy storage systems for synthetic inertia
    - Using neural nets in MatLab and Python to function fit energy system simulations
  - **RISELab (2018-present):**
    - Worked on realtime interactive SQL data display tool using React to account for user interactions with streaming data
    - Working on optimized query execution across distributed databases
  - **AutoLab (2017-18):**
    - Built databases using TensorFlow object detection API
    - Worked on deep-learning neural-net textual error corrector for data cleansing with large data repositories

        - Built pipeline to create structured databases from unstructured data sources and authored whitepaper on system
    - **Renewable & Appropriate Energy Lab (2017-18):**
        - Assisted in creation of a long-term energy capacity modeling tool (PROGRESS) and subsequent migration to Python
        - Took the lead on creating output schema to ensure widest possible applicability
        - Coauthored IEEE-published academic paper ("Generation expansion analysis in low data settings")
    - **BEST Lab (2016-17)**:
        - Joined Human Centered Design and Development research group
        - Took charge of data-mining project to determine trends and connections within the HCD+D research community using unsupervised machine learning (topic modeling)
- **Electrical Engineering Mentor**
    - Taught weekly sections to small groups of students taking the introductory electrical engineering course; many students were encountering circuitry and linear algebra topics for the first time
    - Covered topics from lecture and went through problem tutorials with the students
    - Helped students devise test-taking strategies
- **Full Stack Engineering Intern at GoFind.AI (2017):**
    - Instrumental in frontend development of Android and iOS apps through Angular.js
    - Worked with marketing team to incorporate customer feedback into app functionality
    - Used TensorFlow computer detection and neural net frameworks to fine-tune visual search engine
- **Tech Team Intern at SheCanCode (2017):**
    - Held a pivotal role in the development of SheCanCode web platform
    - Scraped websites and utilized API calls to retrieve relevant training and empowerment events to post on platform
    - Designed searches personalized to users by geographic location
- **Web Development Intern at Deckstr Inc. (2017):**
    - Used Node.js in web-scraping context to build virtual business card exchange platform
- **UCSC Research Intern (2014-2015):**
    - Parsed genomes from Stanford HIV Database, using probabilistic modeling on longitudinal data
    - Generated weighted, directed networks mapping use of certain drugs to the incidence of common mutations
    - Gained early exposure to Bayesian networks and data analysis (e.g. Jaccard index, set theory)
- **Independent Researcher, Harker School (2013-2014**):
    - Collected samples of Europa's electromagnetic spectrum through a telescope
    - Used SciPy and Spectrasuite for graphical analysis to determine presence of oxygen

Positions Held

- Reporter/Television Beat for *Daily Californian*
- Violin tutor through The Music Connection at Berkeley
- Selected to study abroad summer 2016 at University of Cambridge through the Pembroke-Kings Programme