Emaan Hariri

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Education

University of California, Berkeley   Berkeley, CA

Bachelor of Arts in Computer Science & Statistics   *August 2016 – May 2020*

Honors/Awards: Dean's Honors List, Upsilon Pi Epsilon (CS Honor Society)

Relevant Coursework: Algorithms (CS 170), Data Structures (CS 61B), Machine Structures & Computer Architecture (CS 61C), Discrete Mathematics & Probability Theory (CS 70), Artificial Intelligence (CS 188), Computer Security (CS 161)[IP], Computing with Data (STAT 133), Concepts of Probability (STAT 134), Concepts of Statistics (STAT 135)[IP], Information Devices and Systems I (EE 16A), Linear Algebra and Differential Equations (MATH 54)

Experience

UC Berkeley College of Engineering   Berkeley, CA

Undergraduate Student Instructor   *June 2018 - Present*

- **Discrete Mathematics and Probability Theory (CS 70)**: Teach discussion sections of UC Berkeley's staple Discrete Mathematics and Probability course. Only student to TA two CS courses Summer 2018.
  - Teach topics in discrete mathematics and probability which include propositional logic, proofs, number theory, graph theory, countability, computability, polynomials, error correction, RSA cryptosystem, counting, discrete and continuous random variables, hashing and load balancing, expectation and variance, bounding, and Markov chains.
  - Generate and select content and questions for discussion worksheets and weekly problem sets.
  - Hold office hours for 2 hours and discussion sections for 4 hours every week with over 30 students.
- **Machine Structure and Computer Architecture (CS 61C)**: Taught UC Berkeley's core lower division Machine Structures and Computer Architecture Course.
  - Taught topics which include C programming (arrays, strings, pointers, memory management), assembly language, machine language, floating point, caches and coherency, parallelism (data, instruction, and thread optimization), warehouse scale computing, MapReduce, virtual memory, dependability, RAID, I/O, disks, and networking.
  - Created, developed, and updated labratory assignments which involve logic simulation with Logisim, cache simulation with MARS, OpenMP and Intel SSE, and general programming in C, RISC-V, and Python.
  - Converted first part of hallmark two-part CPU project from project to laboratory assignment.

Mobile Developers of Berkeley   Berkeley, CA

Android and Web Developer   *September 2016 - Present*

- **Android Development**: Created Android statistics application StatWiz with team of three.
  - Led team of three through Agile development cycle, created project roadmap, assigned story sprints, conducted industry level code reviews.
  - Implemented custom statistics library and screen designs using Java, Android SDK, and XML. Utilized the Apache Commons Math Library and designed per Googles Material Design standards
- **Web Development**: Developed web app PriceGuessr, a price guessing trivia game, in team of four.
  - Implemented front end of web app using AngularJS, Bootstrap and helped with backend on Firebase.
  - Used eBay API to load and select appropriate product information (price, descriptions, categories, tags, etc.) and images for use in trivia app. Parsed XML using JavaScript to extract appropriate data.

Henry Samueli School of Engineering UC Irvine   Irvine, CA

Research Assistant   *October 2015 - January 2017*

- **Materials Science Research**: Tested efficacy of various substrates and coating materials for use in turbine optimization as a part of the Advanced Power and Energy Program in the laboratory of Prof. Daniel R. Mumm.

Projects

StatWiz: Statistics utility, reference, and calculator Android app made for students in introductory statistics courses.
PriceGuessr: Trivia web app where user attempts to guess prices of different items from eBay (link).
CS 170 Project: NP-Hard problem approximator which uses ILP/LP and other algorithms to find optimal route to "conquer" 200+ kingdoms as defined by project, group finished rank 7/230 in class (contact for code/report).

Programming Skills

Languages: Python, Java, C, R   **Technologies**: LaTeX, Git, NumPy/SciPy