Emaan Hariri

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Education

The University of Chicago Law School — Chicago, IL
Juris Doctor — *Expected June 2026*

University of California, Berkeley — Berkeley, CA
Master of Science in Electrical Engineering and Computer Sciences — GPA: 4.0/4.0 — *Dec 2021*
Bachelor of Arts with Highest Honors in Computer Science — GPA: 3.97/4.0, Major GPA: 4.0/4.0 — *May 2020*
Advisor: Satish Rao Concentrations: Artificial Intelligence/Machine Learning, Theory, Statistics
Honors/Awards: Highest Honors, Phi Beta Kappa, Dean's Honors, Upsilon Pi Epsilon (CS Honors), Outstanding GSI
Relevant Coursework: Graduate Algorithms & Data Structures, Sketching Algorithms, Network Structures, Machine Learning, Operating Systems, Stochastic Processes, Deep Reinforcement Learning, Machine Structures, Time Series.

Experience

Bodo, Inc. — San Francisco, CA / Pittsburgh, PA
Software Engineer — *November 2021 – November 2022*

- **Bodo Engine**: Developed compiler technology for optimizing and parallelizing Python for data science and ETL. Current customers range from individual data engineers to a Fortune 5 company.
  - Wrote parallelized and JIT-compilable implementations of common Numpy and Pandas operations using Numba API with code generation and MPI (Python/C++), testing with Pytest.
  - Optimized customer data engineering jobs, converted Java code to Python and refactored to make use of Bodo APIs; e.g. achieved 10× speed-up and 98+% cost saving on customer bioinformatics ETL workload.
- **BodoSQL**: Extended Bodo Engine to accept multiple SQL variants as inputs and compile to HPC code.
  - Expanded coverage of SQL operations (e.g. `RANK`, `CAST(val AS type)`), prioritizing customer use cases.
  - Translated SQL to Python, using Apache Calcite for parsing and logical plan generation.
- **DataAPIs Consortium**: Represented Bodo at the Consortium for Python Data API Standards (weekly) alongside engineers from Intel, NVIDIA, etc.; concerned with type stability and parallelizability in new DataFrame standards.

Salesforce, Inc. — San Francisco, CA
Software Engineering Intern — *June 2019 – August 2019*

- **Embedded Service for Web Team (Service Cloud)**: Converted internal Aura JS framework to use Lightning Web Components (LWC) to drive its adoption. Currently in active use by Service Cloud customers.
  - Modified core Java backend. Implemented ES6 libraries. Wrote functional/integration tests in Jest/JUnit.
  - Designed libraries that were API-compatble with the Aura framework, while using LWC under-the-hood.

UC Berkeley College of Engineering — Berkeley, CA
Undergraduate / Graduate Student Instructor — *June 2018 – May 2021*

- **CS 270: Graduate Algorithms & Data Structures**: *Spring 2021*
- **CS 170: Algorithms**: *Fall 2019 (P), Spring 2020 (P), Fall 2020 (H), Spring 2021 (P)*
- **CS 70: Discrete Mathematics & Probability Theory**: *Summer 2018, Fall 2018, Spring 2019*
- **CS 61C: Computer Architecture**: *Summer 2018*
  - *Head TA (H):* Worked directly with professors to manage, develop, and administer all aspects of course.
  - *Project TA (P):* Developed course project to explore concepts of NP-Completeness and optimization.
  - *TA:* Teach discussion sections, lead office hours, and develop course content for homeworks, exams, etc.

Projects & Research

Improved Bounds for Incoherent Matrix Completion (MS Thesis): Applied novel entry-wise analysis to derive lower bound for the matrix completion problem, canonically known as the Netflix problem. (Research ongoing)

Framework for Coping with Slow Environments that have Fast Approximations: Experimental agent-training framework for reinforcement designed for functioning in serial and parallel (submitted for CS 285).

Programming Skills

Languages: Python, Java, C/C++, R, SQL, JS **Technologies**: Git, Pandas, NumPy/SciPy, PyTorch, LaTeX