

Max Litster

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Education

University of California, Berkeley

Berkeley, CA

BACHELOR OF ARTS IN COMPUTER SCIENCE, GPA: 3.940/4.0

August 2018 to May 2022

- **Coursework:** Abstract Algebra, Optimization Models, Efficient Algorithms and Intractable Problems, Signals and Systems, Linear Algebra, Discrete Mathematics and Probability Theory, Data Structures, Machine Structures, Designing Information Devices and Systems, The Structure and Interpretation of Computer Programs

Experience

UC Berkeley College of Engineering

Berkeley, CA

UNDERGRADUATE STUDENT INSTRUCTOR, MACHINE STRUCTURES

Jun. 2020 - Aug. 2020

- One of fifteen teaching assistants for introductory course in computer architecture and systems programming covering C programming, RISC assembly language, pipeline CPU design, caching, virtual memory, and parallelism, among other topics
- Responsible for holding remote recitation sections, office hours, and labs twice a week
- Wrote, developed, and debugged worksheet walkthroughs, exam questions, and programming projects for a summer class of over 300 students.

Berkeley MikGroup

Berkeley, CA

RESEARCH ASSISTANT

Jan. 2020 - PRESENT

- Worked under Professor Miki Lustig to develop high-level tutorials and a Python interface for BART, the Berkeley Advanced Reconstruction Toolbox, a high-performance MRI reconstruction library.
- Used SWIG to auto-generate Python bindings for BART and interface with numpy and scientific computing packages.
- Created interactive tutorials demonstrating how to perform basic 2D image reconstruction, coil compression, and basic array and image manipulation in BART, and presented demos at a webinar given to over 250 professionals in the field.

CAHL Lab

Berkeley, CA

UNDERGRADUATE RESEARCHER AND FULL-STACK DEVELOPER

Sep. 2019 - PRESENT

- **Current Research:** Using network embeddings to develop distributed representations of academic faculty based on the citation network linking their publications.
- Using distributed representations as well as faculty-provided research descriptions to extract latent search keywords from the embedding space to enhance a student-facing research discovery tool.
- Used PyTorch-BigGraph to learn embeddings of a network with over five million nodes
- Manuscript under review.
- **Development Work:** Full-stack engineer for AskOski, UC Berkeley's course guidance system.
- Expanded course-search coverage to include data on faculty research and helped centralize several features under a singular system-wide search interface.
- Work closely with the data pipeline designed to query campus API's and use a series of RNN, Transformer and Regression-based models to generate intelligent course recommendations and academic plan suggestions for students.
- Extensive work in Angular and Python with Flask, pandas, scikit-learn, nltk, and gensim.

Talla

Boston, MA

DATA SCIENCE INTERN

Jun. 2019 - Aug. 2019

- Consolidated and refactored common text pre-processing steps (text normalization, stopword removal, tokenization) throughout a large codebase.
- Integrated a classifier trained to identify procedural content into the NLP pipeline.
- Profiled the effectiveness of off-the-shelf NER models (those of spaCy, flair, and MITIE) on large customer datasets to determine the most effective baseline model for augmenting the product's Named Entity Recognition system.
- Trained an additional validity classifier and introduced a series of data-driven heuristics to drastically reduce noise and boost precision throughout the process of Named Entity Recognition.
- Gained strong proficiency in spaCy, NLTK, numpy, and pandas, and experimented with deep learning NLP frameworks in pyTorch.

Interests

Long-Distance Running, Reading, Live Music, Mathematics, Improv Comedy