Max Litster

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Education

University of California, Berkeley

Berkeley, CA

Bachelor of Arts in Computer Science, GPA: 3.933/4.0 — *August 2018 to May 2022*

- **Completed Coursework**: 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
- **Current Coursework**: Introduction to Artificial Intelligence, Optimization Models in Engineering, Sketching Algorithms*

** = graduate*

Skills

Proficient Python (numpy, pandas, sklearn, spaCy, nltk, Flask), C, Java, Bash

Familiar pyTorch, TensorFlow, Angular, Vim, HTML, CSS, RISC-V, LaTeX

Experience

CAHL Lab

Berkeley, CA

Undergraduate Researcher and Full-Stack Developer — *Sep. 2019 - PRESENT*

- **Current Research:** Evaluating state-of-the-art methods in network embedding to develop distributed representations of academic faculty based on the citation relationships between research 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 search interface.
- Writing pyTorch implementations of embedding algorithms that draw from the structure of a citation network and the rich textual data of its document.
- Advisor: Professor Zachary Pardos, PhD
- **Development work:** Full-stack engineer for 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 data 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.

Berkeley MikGroup

Berkeley, CA

Research Assistant — *January 2020 - PRESENT*

- Worked under Professor Miki Lustig to develop high-level examples of using BART: the Berkeley Advanced Reconstruction Toolbox, a C-based library for high-performance computational MRI.
- Created interactive tutorials demonstrating how to perform basic 2D image reconstruction, coil compression, and basic array and image manipulation in BART
- Presented demos at a webinar given to over 250 professionals in the field.

Talla

Boston, MA

Data Science Intern — *Jun. 2019 - Aug. 2018*

- 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, 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